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ABSTRACT

This competency-based module uses the Ocean County (New Jersey) Vocational-Technical Schools curriculum-infused model for infusing basic skills instruction into vocational education. The model demonstrates the relationship of vocational skills to communication, mathematics, and science. The document begins with a philosophy statement; preface; a table that explains the number of hours required for academic credit in various programs and the number of those hours that are devoted to basic skills and vocational activities; matrices that show in which courses specific basic skills are taught; a list of objectives; and an explanation of student activities. The rest of the document consists of matrices that describe the relationship of vocational skills to basic skills within the landscaping and greenhouse technology program. These pages are organized by instructional unit and the topics within them. For each topic and associated task(s) are listed the theories and the communication, math, and science skills covered. Also listed are the expected student outcomes. The six units are: orientation; classroom and shop safety; plant science; landscape; greenhouse horticulture; and floristry. (KC)

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# Competency Based Vocational Curricula

# COM-A-LINK

## With Basic Skills And Academic Linkages

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In Cooperation With The

New Jersey State Department of Education

Division of Vocational Education

And

Ocean County Vocational-Technical School

U.S. DEPARTMENT OF EDUCATION
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Ocean County Vocational-Technical School

Landscaping and Greenhouse Technology

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## PHILOSOPHY OF EDUCATION

The Ocean County Vocational-Technical Education Program should consist of those courses, activities and experiences which are designed to prepare students for a successful entrance in a given field of work. The program should be based upon an analysis of the worker needs of the field of work, the opportunities and requirements for entrance, and the particular characteristics and needs of the students.

We believe that:

The school should educate and train the students to live effectively in our ever-changing world.

The school should provide, for each student, intensive training toward general and specific job objectives, and setting standards of performance in keeping with the requirements of that particular field of work.

All students should evidence the interest, aptitude, and ability to profit from the specialized instruction, and this should be a condition of entrance into or continuance in a given field of work.

Equal attention should be given in the school program to develop sound character, good citizenship, ability to think critically, and maintain good mental and physical health.

The school must be constantly striving to fulfill its ultimate purpose; that of serving the students and the community. The school should give careful consideration to the needs, interests, and capacities of the students and the educational and technical background, experience, training, and professional interest of the professional staff as they develop a working philosophy of education.

## PREFACE

The curriculum format employed by this project is competency based and utilizes the Ocean County Vocational-Technical Schools' curriculum infused model for the teaching of basic skills as part of vocational education. The design demonstrates the relationship of vocationally related skills to communication, mathematics and science knowledge. Proficiences with regard to student outcomes cannot be achieved without mastery in related academic areas. All student outcome objectives are predicated upon entry level skills which reflect the dictates of the job marketplace and industry. In addition, basic skills matrices developed by the district are included. The totality of this package is designed to facilitate the vocational teaching process and to enchance the learning experiences of our students.

## POTENTIAL OPPORTUNITY FOR AWARDING ACADEMIC CREDITS FOR STUDENTS AT OCEAN COUNTY VOCATIONAL-TECHNICAL SCHOOL

450 hours - 1 year course at O.C.V.T.S.
900 hours - 2 year course at O.C.V.T.S.
1000 hours - 2 year Beauty Culture course

120 hours per year needed for 5 credits
60 hours per year needed for 2½ credits

| COURSE | TOTAL HOURS | HOURS SPENT ON COMMUNICATION SKILLS | HOURS SPENT ON COMPUTATION SKILLS | HOURS SPENT ON SCIENCE | TIME ON OCCUPATIONAL ACTIVITIES IN CLASS OR SHOP |
|---|---|---|---|---|---|
| AIR CONDITIONING, REFRIGERATION AND HEATING | 900 | 140 | 120 | 120 | 520 |
| AUTO BODY REPAIR | 900 | 130 | 120 | 125 | 525 |
| AUTOMOTIVE MECHANICS | 900 | 150 | 120 | 120 | 510 |
| AUTOMOTIVE AND DIESEL ENGINE REBUILDING | 900 | 216 | 126 | 125 | 433 |
| BEAUTY CULTURE I AND II | 1000 | 240 | 120 | 130 | 515 |
| BUILDING TRADES | 900 | 135 | 120 | 130 | 515 |
| BUSINESS RELATIONS - MEDIA/MODELING | 450 | 200 | 60 | 40 | 150 |
| CHILD CARE AIDE | 900 | 240 | 120 | 122 | 418 |
| COMMERCIAL ART AND PRINTING | 900 | 120 | 215 | 75 | 580 |
| COMMERCIAL BUILDING CONSTRUCTION (MASONRY) | 900 | 130 | 125 | 130 | 515 |

## POTENTIAL OPPORTUNITY FOR AWARDING ACADEMIC CREDITS FOR STUDENTS AT OCEAN COUNTY VOCATIONAL-TECHNICAL SCHOOL

450 hours - 1 year course at O.C.V.T.S.
900 hours - 2 year course at O.C.V.T.S.
1000 hours - 2 year Beauty Culture course

120 hours per year needed for 5 credits
60 hours per year needed for 2½ credits

| COURSE | TOTAL HOURS | HOURS SPENT ON COMMUNICATION SKILLS | HOURS SPENT ON COMPUTATION SKILLS | HOURS SPENT ON SCIENCE | TIME ON OCCUPATIONAL ACTIVITIES IN CLASS OR SHOP |
|---|---|---|---|---|---|
| COMMERCIAL PHOTOGRAPHY & TELEVISION PRODUCTION | 900 | 150 | 125 | 80 | 545 |
| CUSTOM CABINETMAKING | 900 | 130 | 120 | 60 | 590 |
| DENTAL ASSISTING | 450 | 168 | 65 | 77 | 140 |
| DESIGN DRAFTING | 900 | 135 | 150 | 165 | 450 |
| ELECTRICAL TRADES | 900 | 106 | 120 | 124 | 550 |
| FASHION MERCHANDISING | 450 | 200 | 60 | 40 | 150 |
| FOOD SERVICES | 900 | 206 | 132 | 125 | 437 |
| INDUSTRIAL AUTOMATION AND ELECTRONICS | 900 | 129 | 140 | 132 | 499 |
| INTERIOR DESIGN | 900 | 210 | 130 | 120 | 440 |
| LANDSCAPING AND GREENHOUSE TECHNOLOGY | 900 | 125 | 125 | 175 | 475 |

## POTENTIAL OPPORTUNITY FOR AWARDING ACADEMIC CREDITS FOR STUDENTS AT OCEAN COUNTY VOCATIONAL-TECHNICAL SCHOOL

450 hours - 1 year course at O.C.V.T.S.
900 hours - 2 year course at O.C.V.T.S.
1000 hours - 2 year Beauty Culture course

120 hours per year needed for 5 credits
60 hours per year needed for 2½ credits

| COURSE | TOTAL HOURS | HOURS SPENT ON COMMUNICATION SKILLS | HOURS SPENT ON COMPUTATION SKILLS | HOURS SPENT ON SCIENCE | TIME ON OCCUPATIONAL ACTIVITIES IN CLASS OR SHOP |
|---|---|---|---|---|---|
| MARINE ENGINE AND BOAT SERVICES | 900 | 164 | 120 | 125 | 491 |
| MEDICAL OFFICE RECEPTIONIST/ASSISTANT | 450 | 173 | 60 | 77 | 140 |
| MEDICAL SKILLS AND RELATED HEALTH CAREERS | 450 | 135 | 65 | 125 | 125 |
| MEDICAL SKILLS (ADVANCED) | 450 | 125 | 60 | 125 | 140 |
| PLUMBING AND HEATING | 900 | 140 | 120 | 120 | 520 |
| RECREATIONAL VEHICLE MAINTENANCE AND REPAIR | 900 | 125 | 130 | 60 | 585 |
| T.V. AND COMPUTER REPAIR | 900 | 125 | 150 | 175 | 450 |
| WELDING | 900 | 135 | 120 | 100 | 545 |

## COMMUNICATION SKILLS

Listed below are all courses offered at the Ocean County Vocational-Technical School.
The asterisk indicates that the topic is studied in that curriculum.

| COURSE | Functional Reading Skills | Vocabulary | Identifying Main Ideas | Meanings in Context | Inferences | Fact/Opinion Distinction | Signal Words | Parts of Textbook/Manual | Following Directions | Outlining and Note Taking | Interpretation of Maps, Graphs and Charts | Interpretation of Diagrams | Test Taking Skills | Expository Writing Skills | Problem Solving | Spelling | Oral Communications | Study Skills | Resume Writing | Job Application Skills |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AIR CONDITIONING, REFRIGERATION AND HEATING | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| AUTO BODY REPAIR | * | * | | * | * | * | * | | * | * | * | * | * | * | * | * | * | * | * | * |
| AUTOMOTIVE MECHANICS | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| AUTOMOTIVE AND DIESEL ENGINE REBUILDING | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| BEAUTY CULTURE I AND II | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| BUILDING TRADES | * | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| BUSINESS RELATIONS - MEDIA/MODELING/TRAVEL | * | * | * | * | * | * | * | * | * | * | * | * | * | * | | * | * | * | * | * |
| CHILD CARE AIDE | * | * | * | * | * | * | * | | * | * | * | * | * | * | * | * | * | * | * | * |
| COMMERCIAL ART AND PRINTING CAREERS | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| COMMERCIAL BUILDING CONSTRUCTION (MASONRY) | * | * | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| COMMERCIAL PHOTOGRAPHY AND TELEVISION PRODUCTION | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| CUSTOM CABINETMAKING | * | * | | * | * | * | * | | * | * | * | * | * | * | * | * | * | * | * | * |
| DENTAL ASSISTING | * | * | * | * | * | * | * | | * | * | * | * | * | * | * | * | * | * | * | * |

COMMUNICATION SKILLS - CONTINUED

| COURSE | Functional Reading Skills | Vocabulary | Identifying Main Ideas | Meanings in Context | Inferences | Fact/Opinion Distinction | Signal Words | Parts of Text-book/Manual | Following Directions | Outlining and Note Taking | Interpretation of Maps, Graphs and Charts | Interpretation of Diagrams | Test Taking Skills | Expository Writing Skills | Problem Solving | Spelling | Oral Communications | Study Skills | Resume Writing | Job Application Skills |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DRAFTING | * | * | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| ELECTRICAL TRADES | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| FASHION MERCHANDISING | * | * | * | * | * | * | * | | * | * | * | * | * | * | * | * | * | * | * | * |
| FOOD SERVICES | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| INDUSTRIAL AUTOMATION AND ELECTRONICS | * | * | * | | * | * | | | * | * | * | * | * | * | * | * | * | * | * | * |
| INTERIOR DESIGN | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| LANDSCAPING AND GREENHOUSE TECHNOLOGY | * | * | * | * | * | * | * | | * | * | * | * | * | * | * | * | * | * | * | * |
| MARINE ENGINE AND BOAT SERVICE | * | * | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| MEDICAL OFFICE RECEPTIONIST/ASSISTANT | * | * | * | * | * | * | * | | * | * | * | * | * | * | * | * | * | * | * | * |
| MEDICAL SKILLS AND RELATED HEALTH CAREERS | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| MEDICAL SKILLS (ADVANCED) | * | * | * | * | * | * | * | | * | * | * | * | * | * | * | * | * | * | * | * |
| PLUMBING AND HEATING | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| RECREATIONAL VEHICLE MAINTENANCE AND REPAIR | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| T.V. AND COMPUTER REPAIR | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| WELDING | * | * | * | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |

## MATHEMATICS SKILLS

Listed below are all courses offered at the Ocean County Vocational-Technical School. The asterisk indicates that the topic is studied in that curriculum.

| COURSE | Whole Numbers | Common Fractions | Decimals | Percentages | Weights and Measurements | Ratio and Proportion | Powers and Roots | Formulas | Estimating | Geometry | Basic Trigonometric Functions | Graphs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AIR CONDITIONING, REFRIGERATION AND HEATING | * | * | * | * | * | * | * | * | * | * | * | * |
| AUTO BODY REPAIR | * | * | * | * | * | * | * | * | * | * | | * |
| AUTOMOTIVE MECHANICS | * | * | * | * | * | * | * | * | * | | | * |
| AUTOMOTIVE AND DIESEL ENGINE REBUILDING | * | * | * | * | * | * | * | * | * | * | | * |
| BEAUTY CULTURE I AND II | * | * | * | * | * | * | * | * | * | * | * | * |
| BUILDING TRADES | * | * | * | * | * | * | * | * | * | * | * | * |
| BUSINESS RELATIONS - MEDIA/MODELING/TRAVEL | * | | * | * | | * | | | * | | | * |
| CHILD CARE AIDE | * | * | * | * | * | * | | * | * | * | * | * |
| COMMERCIAL ART AND PRINTING CAREERS | * | * | * | * | * | * | | * | * | * | | * |
| COMMERCIAL BUILDING CONSTRUCTION (MASONRY) | * | * | * | * | * | * | * | * | * | * | * | * |
| COMMERCIAL PHOTOGRAPHY AND TELEVISION PRODUCTION | * | * | * | * | * | * | * | * | * | * | * | * |
| CUSTOM CABINETMAKING | * | * | * | * | * | * | * | * | * | * | * | * |
| DENTAL ASSISTING | * | * | * | * | * | * | | * | * | | | * |

MATHEMATICS SKILLS - CONTINUED

| COURSE | Whole Numbers | Common Fractions | Decimals | Percentages | Weights and Measurements | Ratio and Proportion | Powers and Roots | Formulas | Estimating | Geometry | Basic Trigonometric Functions | Graphs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DESIGN DRAFTING | * | * | * | * | * | * | | * | * | * | * | * |
| ELECTRICAL TRADES | * | * | * | * | * | * | * | * | * | * | * | * |
| FASHION MERCHANDISING | * | * | * | * | * | * | | * | * | * | | * |
| FOOD SERVICES | * | * | * | * | * | * | | * | * | * | | * |
| INDUSTRIAL AUTOMATION AND ELECTRONICS | * | * | * | * | * | * | | * | * | * | * | * |
| INTERIOR DESIGN | * | * | * | * | * | * | | * | * | * | | * |
| LANDSCAPING AND GREENHOUSE TECHNOLOGY | * | * | * | * | * | * | | * | * | * | * | * |
| MARINE ENGINE AND BOAT SERVICE | * | * | * | * | * | * | | * | | | * | * |
| MEDICAL OFFICE RECEPTIONIST/ASSISTANT | * | * | * | * | * | * | * | * | * | * | | * |
| MEDICAL SKILLS AND RELATED HEALTH CAREERS | * | * | * | * | * | * | | * | * | * | * | * |
| MEDICAL SKILLS (ADVANCED) | * | * | * | * | * | * | | * | * | * | * | * |
| PLUMBING AND HEATING | * | * | * | * | * | * | * | * | * | * | * | * |
| RECREATIONAL VEHICLE MAINTENANCE AND REPAIR | * | * | * | * | * | * | * | * | | | * | * |
| T.V. AND COMPUTER REPAIR | * | * | * | * | * | * | * | * | | * | * | * |
| WELDING | * | * | * | * | * | * | | * | * | * | * | * |

## SCIENCE SKILLS

Listed below are all courses offered at the Ocean County Vocational-Technical School. Those listed as "Not Available" do not offer enough hours to qualify for credits in your high school. However, we have noted the skills covered. Those listed with an asterisk after the title are eligible. The asterisk indicates that the topic is studied in that curriculum.

| | HUMAN ANATOMY | | | | | | ASTRONOMY | | | CHEMISTRY | | | PHYSICS | | | | | ECOLOGY | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COURSE | Cellular Theory | Skeletal System | Muscles | System of Body | Diseases | Psychology | Solar System | Gravity | Weather | Matter | Chemical Reactions | Applied Chemistry | Light | Magnetism | Heat | Magnetism and Electricity | Nuclear Energy | Botany | Food Production | Fuels | Nutrition | Waste Disposal |
| AIR CONDITIONING, REFRIGERATION AND HEATING | | | | | | | * | * | * | * | * | * | | * | * | * | | | | * | * | |
| AUTO BODY REPAIR | | | | | | | | * | * | * | * | * | * | * | * | | | | | * | | * |
| AUTOMOTIVE MECHANICS | | | | | | | | * | | * | * | * | * | * | * | * | | | | * | | |
| AUTOMOTIVE DIESEL AND ENGINE REBUILDING | | | | | | | | * | | * | * | * | | * | * | * | * | | | * | | * |
| BEAUTY CULTURE I AND II | * | * | * | * | * | * | | | | * | * | * | * | | * | * | | | | | * | |
| BUILDING TRADES | | | | | | | * | * | * | * | * | * | * | | * | * | | * | | * | | |
| BUSINESS RELATIONS - MEDIA/MODELING/TRAVEL | N | * O | * T | * A | V | * A | I | L | A | B | L | E | | | | | | | | | | |
| CHILD CARE AIDE | * | * | * | * | * | * | | | * | | * | * | | * | * | | | * | * | | * | * |
| COMMERCIAL ART AND PRINTING CAREERS | N | O | T | A | V | A | I | * L | A | * B | * L | * E | * | | * | * | | | | | | * |
| COMMERCIAL BUILDING CONSTRUCTION (MASONRY) | * | * | * | * | * | * | | * | * | * | * | * | * | * | * | * | | * | | * | * | * |
| COMMERCIAL PHOTOGRAPHY AND TELEVISION PRODUCTION | N | O | T | A | V | * A | I | * L | A | * B | * L | * E | * | | * | * | | | | | | * |
| CUSTOM CABINETMAKING | * N | O | T | A | V | A | I | * L | A | * B | * L | * E | | | * | | | * | | | | |
| DENTAL ASSISTING | * | * | * | * | * | * | | | | * | * | * | * | | | | | | | | * | * |

SCIENCE SKILLS - CONTINUED

| COURSE | HUMAN ANATOMY | | | | | | ASTRONOMY | | | CHEMISTRY | | | PHYSICS | | | | | ECOLOGY | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cellular Theory | Skeletal System | Muscles | System of Body | Diseases | Psychology | Solar System | Gravity | Weather | Matter | Chemical Reactions | Applied Chemistry | Light | Magnetism | Heat | Magnetism and Electricity | Nuclear Energy | Botany | Food Production | Fuels | Nutrition | Waste Disposal |
| DESIGN DRAFTING | | | | | | | * | * | * | * | | * | * | | * | * | * | | | * | | * |
| ELECTRICAL TRADES | | | | | | | * | * | * | * | * | | * | * | * | * | * | | * | | | |
| FASHION MERCHANDISING | * | * | * | * | | * | | * | | * | * | * | * | | | | | | | | * | |
| FOOD SERVICES | | | | | * | * | | * | * | | * | * | * | | * | | | | * | | * | * |
| INDUSTRIAL AUTOMATION AND ELECTRONICS | | | | | | | | * | | * | | | * | * | * | * | * | | | * | | |
| INTERIOR DESIGN | | * | * | | | * | * | * | * | * | * | * | * | | * | * | | | | | | |
| LANDSCAPING AND GREENHOUSE TECHNOLOGY | | | | | | | * | * | * | | * | * | * | | * | * | | * | * | * | * | * |
| MARINE ENGINE AND BOAT SERVICE | | | | | | | | * | * | * | * | * | * | * | * | * | | * | | * | | |
| MEDICAL OFFICE RECEPTIONIST/ASSISTANT | N | * O | * T | * A | * V | * A | I | L | A | B | * L | E | | | | | | | | | | * |
| MEDICAL SKILLS AND RELATED HEALTH CAREERS | * | * | * | * | * | * | | * | | * | * | | | | | * | | | * | | * | * |
| MEDICAL SKILLS (ADVANCED) | * | * | * | * | * | * | | * | | * | * | | | | | * | | | * | | * | * |
| PLUMBING AND HEATING | | | | | * | | * | * | * | * | * | * | | | * | * | | * | | * | | * |
| RECREATIONAL VEHICLE MAINTENANCE AND REPAIR | N | O | T | A | V | A | I | * L | A | * B | * L | * E | * | * | * | * | | | | * | | * |
| T.V. AND COMPUTER REPAIR | | | | | | | | | | * | * | * | * | * | * | * | | | | * | | |
| WELDING | | | | | | | | * | | * | * | * | * | * | * | * | | | | * | | |

## COURSE OBJECTIVES

1. To prepare students with entry level skills, abilities and knowledge for employment in landscaping and greenhouse technology.

2. To present 900 hours of instruction and practice in landscaping and greenhouse technology in accordance with the course curriculum and skill profile outline.

3. To provide a detailed summary evaluation of the proficiency achieved by each student representing the most important content areas presented in the landscaping and greenhouse technology skill profile.

4. To help each student develop positive attitudes and ideals related to their occupation in landscaping and greenhouse technology and understand their own capabilities and potential.

5. To instill in each student the need to plan for their professional growth through continuous learning in their chosen occupation.

## STUDENT ACTIVITIES

Students enrolled in the Ocean County Vocational-Technical School Landscape and Greenhouse Technology and Employment Orientation Lawn and Grounds Maintenance programs are encouraged to join the Ocean County Chapter of Future Farmers of America (FFA). Student activities are infused into the program. Each building has a student government and a student activities program separate from Future Farmers of America, although students are encouraged to join VICA (Vocational Industrial Clubs of America). Additionally, students from the horticulture classes are encouraged to participate in VICA Leadership and Job Demonstration Contests which begin in the centers and radiate throughout the district as Ocean County Vocational-Technical School inter school winners are chosen, as well as, those state FFA contests conducted throughout the year.

Student activities emphasize the basic percepts of Future Farmers of America, as well as, the basic tenets of democracy and citizenship. Within that context, the program teaches the dignity of work, high standards in trade ethics and safety, and a belief in the free enterprise economic system.

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**UNIT:** ORIENTATION



**TOPIC:**

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| I. School rules and regulations | A. Student rights and responsibilities<br>B. Student grievance procedures<br>C. Student expectations<br>D. School code of discipline<br>E. Attendance and graduation policy<br>F. Student transfers<br>G. Grading system<br>H. Accidents<br>I. Bedside instruction<br>J. Cooperative Agricultural Education (C.A.E.)<br>K. Driving policy<br>L. Drug and alcohol policy<br>M. Early dismissal procedures<br>N. Lockers<br>O. Driver permits<br>P. School closing procedures<br>Q. Smoking<br>R. Student progress reports<br>S. Telephones<br>T. Theft<br>U. Tools and equipment<br>V. Point system for violations<br>W. Procedure for tardiness<br>X. Fire drill procedure | A. Outlining and note taking<br>B. Filling out forms<br>C. Oral communications<br>D. Test taking skills<br>E. Functional reading skills (Student Handbook)<br>F. Study techniques and skills | | | A. The student will know what is expected of him/her for the school year in order to promote effective learning conditions<br>1. Written test on knowledge of school regulations and rules (100% accuracy)<br>2. Wrong answers corrected by student and kept in folder<br>B. The student will know the standards to be met within the school and classroom<br>Written test |

UNIT: ORIENTATION - CONTINUED



TOPIC:

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| II. Student requirements | A. Attendance<br>1. Point system<br>2. Excused absenses versus unexcused<br>B. Make-up work for absence<br>1. Illness, etc.<br>2. Vacation with family<br>C. Extra help with assignments<br>1. Teacher instruction<br>2. Remedial help with student support staff personnel<br>D. Homework assignments<br>E. Project assignments<br>F. Notebooks<br>G. Field trips<br>1. Safety<br>2. Restrictions<br>H. Grading system<br>I. Skill profile<br>J. Lockers<br>K. Supervised occupational experience projects (SOE)<br>L. In school projects to meet above<br>M. Directed home project<br>N. Future Farmers of America membership<br>O. Clean-up assignments<br>P. Student emergency forms | A. Note taking skills<br>B. Filling out forms<br>C. Oral communications<br>D. Test taking skills<br>E. Functional reading skills<br>F. Study techniques and skills | | | A. The student will know what is expected of him/her for the school year in order to promote effective learning conditions<br>Written test and performance test<br>B. The student will know the standards to be met within the school and classroom<br>Written test |

**UNIT:** CLASSROOM AND SHOP SAFETY



**TOPIC:** TOOLS

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| I. Utilization and identification of tools | A. General shop tools<br>1. Hammers<br>2. Screwdrivers<br>3. Saws<br>4. Chisels<br>5. Planes<br>6. Drills<br>7. Files<br>B. Horticultural shop tools<br>1. Pruning shears<br>2. Hedge trimmers<br>3. Loppers<br>4. Hatchet<br>5. Tree pruners with telescopic extension pole<br>6. Pruning knife<br>7. Pruning saws<br>C. Floristry<br>1. Floristry knife<br>2. Wire/flower shears<br>3. Ribbon scissors<br>4. Wire clippers<br>5. Package stapler<br>6. Pick machine<br>7. Hot glue gun<br>8. Shovels<br>a. D-handle<br>b. nursery spade<br>c. trowels<br>9. Rakes<br>a. steel<br>b. leaf<br>c. grading<br>d. cavex<br>10. Hoes<br>a. nursery<br>b. onion<br>11. Pick<br>12. Post hole digger | A. Deductive reasoning - written test<br>B. Vocabulary - identification of tools and the job they perform<br>C. Spelling<br>D. Functional reading skills<br>E. Inferences<br>F. Test taking skills<br>G. Oral communications<br>H. Note taking skills<br>I. Following directions | A. Diameter<br>B. Geometry - angle of blade to be sharpened | | A. The student will be able to correctly select the proper tool for the task to be performed<br>B. The student will be able to identify the contents of the general shop tool cabinet<br>C. The student will be able to demonstrate the proper handling of each tool within the limitations of each tool<br>D. The student will be able to clean each tool and see that it is restored back to its storage area<br>E. The student will be able to safely sharpen pruning and floristry knives<br>F. The student will be able to pass a written test<br>G. The student will be able to pass a quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| I. Utilizing chemicals safely | A. Granular concentration<br>1. Dolomitic limestone<br>2. Muriate of potash<br>3. Fertilizers<br>4. Herbicides<br>5. Fungicides<br>6. Miticides<br>7. Slugacides<br>8. Insecticides<br>B. Wettable powders<br>1. Pesticides<br>a. fungicides<br>b. miticides<br>c. insecticides<br>2. Growth retardants<br>3. Floral preservative<br>C. Liquids - emulsifiable concentrates<br>1. Pesticides<br>a. fungicides<br>b. miticides<br>c. insecticides<br>2. Growth regulators<br>D. Dusts - pesticides (insecticides)<br>E. Right to Know Law<br>1. Methods of exposure<br>a. absorption<br>b. inhalation<br>c. ingestion<br>d. eye safety<br>2. Labeling requirements - key words<br>a. warning<br>b. danger<br>c. caution<br>F. Safe handling procedures<br>1. Mixing<br>2. Disposal<br>3. Labeling<br>G. Re-entry periods for chemicals | A. Deductive reasoning - written test<br>B. Vocabulary - key warning words<br>C. Spelling - identification of chemicals<br>D. Functional reading skills<br>1. Label and precautions<br>2. Safety handout<br>3. MSDS (if available)<br>4. Chemical mixing procedures<br>E. Inferences<br>F. Test taking skills<br>G. Oral communications<br>H. Signal words<br>I. Note taking skills<br>J. Following directions | A. Ratio and proportion - mixing pesticides with water<br>B. Weights and measurements<br>1. Liquid<br>2. Dry<br>3. Parts/Per<br>C. Area (square feet)<br>D. Cubic feet computation | A. Absorption<br>1. Definition<br>2. Safe handling procedures<br>B. Ingestion<br>1. Definition<br>2. Protective procedures<br>C. Inhalation<br>1. Definition<br>2. Protective measures<br>D. Protective wear<br>1. Rubber gloves<br>2. Safety glasses - eye protection<br>3. Clothing<br>4. Respirator<br>E. Solutions, concentrations (solubility) and wetting agents<br>F. Liquid measurement<br>1. Ounces<br>2. Pints<br>3. Quarts<br>4. Gallons<br>5. Teaspoons<br>6. Tablespoons<br>G. Dry measurement - pounds/ 1,000 square feet<br>H. Proper identification of<br>1. Insect pests<br>2. Disease<br>3. Elemental defeciencies<br>4. Weeds<br>I. Metamorphosis of insect pests and stages<br>J. Metamorphosis of fungus<br>K. Plant physiology and morphology | A. The student will be able to demosntrate proper handling procedures of chemicals<br>B. The student will be able to calculate amounts of chemical needed to control plant pests<br>C. The student will be able to mix chemicals with water to the desired dosage<br>D. The student will be able to safely make up fertilizer solutions<br>E. The student will be able to calculate the area to be sprayed in the greenhouse or calculate the area to be sprayed<br>F. The student will be able to identify potentially hazardous and dangerous chemicals by reading label precautions<br>G. The student will be able to prescribe and observe proper chemical re-entry times<br>H. The student will be able to pass a written test and quiz |

**UNIT:** PLANT SCIENCE

**TOPIC:** PLANT PARTS

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| I. Identify plant parts and function | A. Plant propagation - sexual versus asexual<br>B. Cycle of reproduction<br>C. Parts of the flower<br>1. Female; pistillate<br>a. stigma<br>b. style<br>c. ovary<br>2. Male - staminate<br>a. filament<br>b. anther<br>c. pollen<br>D. Process of plant reproduction<br>E. Pollination<br>1. Self<br>2. Cross pollination<br>3. Hybrids<br>F. Photosynthesis<br>1. Formula<br>2. Steps<br>3. Effects of light, water temperature and aeration<br>G. Respiration | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills<br>G. Identifying main ideas<br>H. Interpretation of diagrams<br>I. Interpretation of graphs<br>J. Signal words | | A. Photosynthesis<br>B. Plant reproduction<br>C. Plant anatomy<br>D. Plant physiology<br>E. Entomology | A. The student will be able to define photosynthesis in its simplest terms<br>B. The student will be able to explain the importance to plant growth<br>C. The student will be able to state optimum temperature levels<br>D. The student will be able to tell what effects temperature, water and aeration have on photosynthesis<br>E. The student will be able to name the parts of a flower<br>F. The student will be able to differentatiate between sexual and asexual reproduction<br>G. The student will be able to label the sexual reproductive cycle in plants<br>H. The student will be able to draw from memory the fundamental parts of a flower<br>I. The student will be able to convey to others how plants pollinate and how seeds are dispersed<br>J. The student will be able to complete a work sheet<br>K. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| I. Taking soil samples | A. Definitions and terms<br>1. Soil profile<br>2. Sub soil<br>3. Parent material<br>4. Topsoil<br>5. Monolith<br>6. Profile<br>B. Taking the smaple from around the soil plot (compost)<br>1. Mix thoroughly<br>2. Dry sample<br>C. pH test<br>D. Nitrogen test<br>E. Phosphorus test<br>F. Potassium test | A. Functional reading skills<br>B. Outlining and note taking<br>C. Oral communications<br>D. Inferences<br>E. Interpretation of charts and graphs<br>F. Interpretation of diagrams<br>G. Problem solving<br>H. Test taking skills | A. Whole numbers<br>B. Ratio and proportion<br>C. Percentages<br>D. Estimating | A. Soil science<br>B. Chemistry<br>C. Colorimetry<br>D. Solutions<br>E. Fertility<br>F. Osmosis | A. The student will be able to define the related terms and definitions<br>B. The student will be able to take a soil sample from a garden bed<br>C. The student will be able to perform a test to determine pH<br>D. The student will be able to perform a test to check the nitrogen level in the soil sample<br>E. The student will be able to perform a test to check the level of potassium in a given soil sample<br>F. The student will be able to perform a test to determine the phosphorus level in a soil sample<br>G. The student will be able to measure chemicals in soil testing<br>H. The student will be able to identify components of a soil sample<br>I. The student will be able to record data correctly in a log<br>J. The student will be able to make recommendations regarding the fertility of a soil sample<br>K. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| II. Apply fertilizer and lime | A. Terms and definitions<br>1. Chelated iron<br>2. Organic<br>3. Inorganic<br>4. Rotary or cyclone<br>5. Drop type spreader<br>6. Acidic<br>7. Alkaline<br>B. Measurement of areas to be covered<br>1. Taping distances<br>2. Calculating length times width<br>3. Irregular areas<br>4. Cubic footage<br>5. Double digging<br>C. Reading labels of fertilizers<br>1. N-P-K<br>2. Amendments and supplements<br>3. Forms of chemicals and release<br>D. Timed-release fertilizers<br>E. Slow acting fertilizers<br>F. Application<br>1. Pace (speed)<br>2. Calibration of spreader<br>3. Factors affecting application<br>G. Relation to other product application - fungicides, pesticides, etc.<br>H. Lime - dolomitic limestone<br>1. Powdered<br>2. Granular<br>3. Pelletized | A. Functional reading skills<br>B. Vocabulary<br>C. Identifying main ideas<br>D. Signal words<br>E. Following directions<br>F. Outlining and note taking<br>G. Interpretation of charts and graphs<br>H. Interpretation of diagrams<br>I. Test taking skills | A. Whole numbers<br>B. Ratio and proportion<br>C. Graphs<br>D. Weights and measures<br>E. Percentages<br>F. Estimating | A. Soil science<br>B. Chemistry<br>C. Plant nutrition<br>D. Fertility<br>E. Entomology<br>F. Fungus | A. The student will be able to apply a lawn care product such as lime or fertilizer as a pesticde that can be put through a spreader<br>B. The student will be able to select a fertilizer for a lawn that is more economical than nationally advertised brands<br>C. The student will be able to calculate the square footage of a lawn or garden area<br>D. The student will be able to double-dig a garden<br>E. The student will be able to measure out and apply a timed release fertilizer<br>F. The student will be able to calibrate a spreader<br>G. The student will be able to check the accuracy of a spreader or product labeling<br>H. The student will be able to differentiate between an organic and inorganic (chemical) fertilizer<br>I. The student will be able to stack bags of lime or fertilizer upon a pallet<br>J. The student will be able to apply a pre-emergence crabgrass product<br>K. The student will be able to apply a fungicide or weed killer according to label<br>L. The student will be able to develop a simple plan for chemical applications |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| | I. Working fertilizer into gardens, flower beds and around shrubs<br>J. Yearly and timely applications<br>1. Pre-emergence crabgrass control<br>2. Post-emergence crabgrass control<br>3. Insect control - curative<br>4. Fungus control<br>a. curative<br>b. preventative | | | | M. The student will be able to discuss the safety precautions one must take when applying chemicals<br>N. The student will be able to discern the differences between the forms of garden lime available<br>O. The student will be able to complete a work sheet and handout<br>P. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| I. Seed a lawn | A. Terms and definitions<br>1. Grass seed genuses<br>a. poa<br>b. lolium<br>c. festuca<br>2. Annual and perennial types<br>3. Fine textures versus coarse textured grasses<br>B. Seed blends - evaluation<br>1. Shade<br>2. Part shade<br>3. Sunny<br>C. Hydroseeding<br>D. Broad cast seeding<br>1. Cyclone spreader<br>2. By hand<br>E. Germination<br>F. Reading the label<br>G. Watering | A. Functional reading skills<br>B. Vocabulary<br>C. Inferences<br>D. Fact/Opinion distinction<br>E. Following directions<br>F. Outlining and note taking<br>G. Oral communications<br>J. Problem solving<br>K. Interpretation of charts and graphs<br>L. Interpretation of diagrams<br>M. Test taking skills | A. Whole numbers<br>B. Fractions<br>C. Percentages<br>D. Weights and measures<br>E. Estimating<br>F. Graphs | A. Turf science<br>B. Agronomy<br>C. Light<br>D. Temperature<br>E. Plant anatomy<br>F. Biology | A. The student will be able to list the differences of grass between the grass genera<br>B. The student will be able to read a grass seed label<br>C. The student will be able to outline the procedure for sowing grass seed<br>D. The student will be able to water in nearly planted grass seed<br>E. The student will be able to operate a cyclone spreader<br>F. The student will be able to operate a drop type spreader<br>G. The student will be able to broadcast grass seed by hand<br>H. The student will be able to conduct a germination test<br>I. The student will be able to store grass seed properly<br>J. The student will be able to complete a work sheet<br>K. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| II. Mow and edge a lawn | A. Terms and definitions<br>1. Mowing height<br>2. Edge<br>3. Rotary mower<br>4. Reel type mower<br>5. String type weed eater<br>6. Lawn edger<br>B. Types of mowers<br>C. Types of edgers<br>D. Lawn mower safety<br>E. Lawn mower operation<br>1. Check fluid levels<br>2. Check area to be mowed for objects<br>3. Sharpen blades<br>4. Start-up<br>5. Shut off preparation<br>F. Bagging of clippings<br>G. Clean up of clippings<br>H. Mower clean up<br>I. Refueling tank<br>J. Edger operation and safety<br>K. Winter storage<br>L. Dethatch a lawn | A. Functional reading skills<br>B. Vocabulary<br>C. Problem solving<br>D. Following directions<br>E. Outlining and note taking<br>F. Oral communications<br>G. Test taking skills | A. Weights and measures<br>B. Whole numbers | A. Combustion<br>B. Plant science<br>C. Physics | A. The student will be able to mow a lawn<br>B. The student will be able to change oil in a lawn mower<br>C. The student will be able to refill a gasoline engine<br>D. The student will be able to sharpen a lawn mower blade<br>E. The student will be able to oeprate a metal bladed lawn edger<br>F. The student will be able to edge using a hand tool<br>G. The student will be able to cite the advantages and disadvantages of several types of lawn mowers<br>H. The student will be able to operate a string trimmer<br>I. The student will be able to properly store a lawn mower or edger for winter<br>J. The student will be able to determine grass height<br>K. The student will be able to adjust cutting height on a lawn mower<br>L. The student will be able to remove thatch from a lawn to allow better penetration by water<br>M. The student will be able to rake up and recycle thatch clippings<br>N. The student will be able to operate a dethatcher<br>O. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| III. Grade and level site | A. Terms and definitions<br>1. Subsoil<br>2. Topsoil<br>3. Organic matter<br>4. Humus<br>B. Tools and equipment<br>1. Grading tools<br>2. Rototiller<br>3. Steel rakes<br>4. Garden fork<br>5. Shovels<br>6. Wheelbarrow<br>C. Removal of topsoil<br>D. Grading of area with subsoil<br>E. Replacement of topsoil<br>F. Drainage requirements<br>G. Slope | A. Functional reading skills<br>B. Vocabulary<br>C. Inferences<br>D. Following directions<br>E. Outlining and note taking<br>F. Oral communications<br>G. Identifying main ideas<br>H. Test taking skills | A. Whole numbers<br>B. Weights and measures<br>C. Formulas | Soil science | A. The student will be able to operate a rototiller<br>B. The student will be able to incorporate organic matter and soil amendments into soil<br>C. The student will be able to determine the correct slope for adequate drainage<br>D. The student will be able to use a grading rake to level off flower beds or turf areas<br>E. The student will be able to complete a work sheet<br>F. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| IV. Remove leaves from lawn and bed areas | A. Tools and equipment<br>1. Leaf rakes<br>a. metal<br>b. bamboo<br>c. plastic<br>2. Tarpaulins<br>3. Yard cans<br>B. Use of leaf blowers to form leaves into windrows<br>1. Back pack leaf blower<br>2. Push blower<br>C. Collection of leaves<br>D. Composting with leaves<br>E. Use of the leaf shredder<br>F. Leaves as mulch and soil conditions<br>G. Safe operation of leaf blowers and shredders<br>H. Maintenance | A. Functional reading skills<br>B. Vocabulary<br>C. Following directions<br>D. Outlining and note taking<br>E. Oral communications<br>F. Test taking skills | Weights and measures | A. Turf science<br>B. Soil science<br>C. Biology | A. The student will be able to operate a leaf blower<br>B. The student will be able to shred leaves<br>C. The student will be able to build a compost pile<br>D. The student will be able to refuel and service the leaf blower and/or shredder<br>E. The student will be able to rake leaves into windrows<br>F. The student will be able to collect leaves and bag<br>G. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| I. Transplant trees and shrubs | A. Tools and equipment<br>1. Nursery spade<br>2. Twine<br>3. Tarpaulin<br>4. Wheelbarrow, cart or handtruck<br>B. Hole preparation<br>1. Remove soil from hole<br>2. Replace with topsoil, peat moss, humus<br>3. Mix in with subsoil and soil to be backfilled<br>4. Hole should be larger than tree or shrub that is to be planted<br>C. Removal of nursery stock<br>1. Trench around plant<br>2. Do not step on ball that is to be formed<br>3. Remove soil<br>4. Shape ball<br>5. Under cut<br>6. Place burlap under plant, tilt and pull burlap up under opposite side, pull burlap up; tie off<br>D. Re-introduction to soil<br>1. Plant nursery item at same level it had been growing at<br>2. Backfill using prepared soil mix<br>3. Add well around drip line<br>4. Irrigate deeply<br>E. Application of mulch<br>F. Trim back ratio of root to shoot | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills<br>G. Identifying main ideas | A. Weights and measures<br>B. Estimating<br>C. Ratio and proportion | A. Plant growth<br>B. Plant anatomy<br>C. Botany<br>D. Absorption | A. The student will be able to prepare a hole to receive a plant<br>B. The student will be able to mix soil with soil amendments<br>C. The student will be able to dig out a shrub or tree<br>D. The student will be able to reduce shoot to root ratio<br>D. The student will be able to ball and burlap a tree or shrub<br>E. The student will be able to water in newly planted stock<br>F. The student will be able to transplant trees or shrubs into containers with drainage<br>G. The student will be able to transplant into containers without drainage and compensate for the lack of drainage<br>H. The student will be able to complete a work sheet and task sheet<br>I. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| II. Root prune | A. Tools and equipment<br>1. Nursery spades<br>2. Garden shovel<br>3. Twine/cord<br>4. Burlap<br>B. When to root prune<br>1. Prior to transplantation<br>2. Reduce root area to more compact mass<br>3. Control plant height<br>C. Root pruning know how<br>1. Tie up plant to enable close contact to form trench<br>2. Concentric trench dug out from main trunk<br>3. Do not stand on forming root ball<br>4. Under cut<br>5. Cut back any injured roots<br>6. Replace soil<br>7. Re-dig up at proper time for transplantation<br>D. When to move landscape material<br>1. Late winter, early spring<br>2. Late fall, early winter<br>3. Risks involved in later transplantations | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Identifying main ideas<br>F. Test taking skills | A. Weights and measures<br>B. Estimating<br>C. Ratio and proportion | A. Plant growth<br>B. Plant anatomy<br>C. Water absorption<br>D. Botany | A. The student will be able to dig a trench concentric to the drip line of the shrub or tree<br>B. The student will be able to ball and burlap a shrub<br>C. The student will be able to transplant plant material at the proper time of the year<br>D. The student will be able to correctly label the type of tree moved<br>E. The student will be able to complete a work sheet<br>F. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| III. Guy trees and stake supports | A. Terms and definitions - guy wire<br>B. Equipment<br>1. Wire<br>2. Hose<br>3. Stakes<br>4. Turnbuckles<br>C. When used<br>1. Young trees subject to wind, exposure<br>2. Protect roots from rocking back and forth<br>D. Small trees - support with stake and ties<br>E. Larger caliper trees<br>1. Support with two stakes, hose and wire, and possibly three triangulate<br>2. Three points of contact | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Interpretation of diagrams<br>F. Test taking skills | A. Weights and measures<br>B. Ratio and proportion<br>C. Fractions<br>D. Estimating | A. Plant anatomy<br>B. Weather/exposure | A. The student will be able to plant a tree and support using tall stakes or a combination of guy wires and three stakes<br>B. The student will be able to cut lumber and fashion stakes<br>C. The student will be able to use turnbuckles to secure desired tension and support<br>D. The student will be able to complete a handout<br>E. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| IV. Pruning, repairing plant injuries and shear a hedge | A. Facts and purposes for pruning<br>B. Methods of pruning<br>1. Stem<br>2. Root<br>3. Topping<br>4. Heading back<br>5. Thinning out<br>C. Rules of pruning<br>1. Correct procedure for bough removal<br>2. Proper angle<br>3. Proper hand pruning technique<br>4. Cut treatment<br>D. Pruning tools and how to use them<br>1. Thumb and forefinger<br>2. Grass shears<br>3. Topping shears<br>a. ratchet cut<br>b. anvil<br>4. Hedge shears<br>a. hand operated<br>b. electr c<br>5. Pruning shears<br>6. Telescopic pole pruners and pole saws<br>7. Chain saws<br>a. care in handling<br>b. proper care to cut angles, branches<br>c. full mixture<br>d. setting the chain in the guide bar<br>E. Proper methods of pruning<br>F. Hedges and hedge plants<br>1. Formal<br>2. Informal<br>G. Specialized pruning<br>1. Bonsai<br>2. Topiary<br>H. Types of plant injuries | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills<br>G. Identifying main ideas<br>H. Signal words<br>I. Interpretation of maps and charts<br>J. Interpretation of diagrams | A. Whole numbers<br>B. Fractions<br>C. Percentages<br>D. Geometry<br>E. Ratio and proportion<br>F. Weights and measures<br>G. Decimals | A. Plant growth<br>B. Plant nutrition<br>C. Pathology<br>D. Botany | A. The student will be able to remove small branches flush to the bough<br>B. The student will be able to correctly thin out old branches to rejuvenate shrubs having become ungainly<br>C. The student will be able to name and demonstrate two methods of pruning<br>D. The student will be able to accurately remove a bough or limb along the accepted procedure<br>E. The student will be able to list five purposes of pruning<br>F. The student will be able to shear a hedge in a formal manner<br>G. The student will be able to shear a shrub in an open though attractive shape<br>H. The student will be able to name seven pruning tools and demonstrate their use efficiently and safely<br>I. The student will be able to treat wounds<br>J. The student will be able to clean up storm damage<br>K. The student will be able to train a plant in the bonsai tradition<br>L. The student will be able to create a topiary<br>M. The student will be able to complete a work sheet<br>N. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| I. Develop and draw a landscape plan | A. Layout<br>1. Positioning the paper<br>2. Items to be included<br>a. name<br>b. date scale<br>c. site or residences<br>d. north arrow<br>3. Positioning the residence on the paper<br>B. Drafting tools<br>1. Board<br>2. T-square<br>3. Triangles<br>4. Pencils, erasers<br>5. Lettering guide<br>6. Templates<br>7. Erasing shield<br>8. Engineer scale<br>9. Architect's scale<br>C. Plant designation<br>1. Evergreen<br>2. Deciduous<br>D. Mass areas<br>1. Lawn<br>2. Ground cover<br>3. Rocks, gravel and mulch<br>4. Pool<br>5. Hedges, windbreaks<br>E. Construction details<br>1. Concrete, brick and flagstone<br>2. wood<br>3. Fences, walls and patios<br>4. Topsoil and subsoil<br>5. Paving materials<br>F. Major areas to landscape<br>1. Public area<br>2. Private area<br>3. Service or utility area<br>G. Corner plantings<br>H. Entrance planting<br>I. Symmetrical versus | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills<br>G. Identifying main ideas<br>H. Meanings in context<br>I. Inferences<br>J. Interpretation of charts and graphs<br>K. Interpretation of diagrams | A. Whole numbers<br>B. Decimals<br>C. Formulas<br>D. Estimating<br>E. Graphs | A. Plant science<br>B. Soil science<br>C. Plant taxonomy | A. The student will be able to acquire drawing skills to draw a planting plan<br>B. The student will be able to correctly demonstrate the proper use of a T-square, triangle and template<br>C. The student will be able to position site upon paper and paper upon board<br>D. The student will be able to read both an engineer's and architect's scale<br>E. The student will be able to erase using an erasing shield<br>F. The student will be able to employ the use of a lettering guide<br>G. The student will be able to designate plant material using the correct symbol<br>H. The student will be able to list common mistakes made in foundation planting<br>I. The student will be able to correctly space landscape material on paper<br>J. The student will be able to read a landscape plan<br>K. The student will be able to label a drawing<br>L. The student will be able to depict existing trees, objects, etc.<br>M. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| II. Identify landscape plant materials | A. Trees<br>1. Deciduous<br>a. common trees of the area<br>b. Plant forms, shapes and textures<br>c. shade trees<br>d. ornamental<br>e. specimen<br>2. Evergreens<br>a. conifers<br>b. broadleaf tree<br>B. Shrubs<br>1. Evergreens<br>a. broadleaf<br>b. coniferous<br>2. Deciduous<br>C. Order of bloom<br>D. Types of plants<br>1. Perennial<br>2. Biennial<br>3. Annual<br>E. Vines and ground covers<br>F. Plant exposures<br>1. North<br>2. South<br>3. East<br>4. West<br>G. Plant selection<br>1. Exposure<br>2. Soil texture<br>3. Moisture<br>4. Drainage<br>5. Container grown versus balled and burlapped<br>H. Planting specifications<br>1. Size of hole<br>2. Soil preparation and amendment<br>3. Topsoil and subsoil<br>4. Guying and staking | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills<br>G. Identifying main ideas<br>H. Fact/Opinion distinctino<br>I. Signal words<br>J. Interpretation of charts<br>K. Interpretation of diagrams | A. Whole numbers<br>B. Weights and measures<br>C. Estimating<br>D. Graphs | A. Plant taxonomy and identification<br>B. Plant growth<br>C. Plant science<br>D. Planta morphology<br>E. Plant anatomy<br>F. Ecology<br>G. Climate, exposure | A. The student will be able to distinguish between evergreen and deciduous plant material<br>B. The student will be able to research information on plant material using appropriate sources<br>C. The student will be able to categorize plants into trees, shrubs, vines and ground cover<br>D. The student will be able to outline sequential order of flowering trees and shrubs<br>E. The student will be able to define and classify plants into annual, perennial or biennial<br>F. The student will be able to list planting specifications for designated plants<br>G. The student will be able to list reasons shrubs and trees are utilized in landscape plans<br>H. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| | I. Location<br>1. Compliment house, property view<br>2. Blend with features<br>a. specimen<br>b. low maintenance<br>c. frame house<br>d. shade<br>e. beauty<br>f. privacy<br>g. air pollution<br>h. hide architectural blunders or severity<br>J. Considerations<br>1. Texture<br>2. Color<br>a. bloom<br>b. fruit<br>c. leaf<br>d. bark<br>3. Form<br>4. Size<br>5. Shadow<br>6. Mass planting<br>7. Ecology and climate<br>K. Maintenance<br>1. Wrapping<br>2. Anti dessicants<br>3. Fertilization<br>a. root feeding liquid<br>b. root feeding pupi method<br>4. Disease and insect control | | | | |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| III. Design a vegetable garden | A. Cool season crops - early spring sowing<br>1. Cole crops<br>2. Lettuce<br>3. Spinach<br>4. Onions, leeks, shallots, beets and chard<br>B. Warm season crops<br>1. tomatoes<br>2. Peppers<br>3. Eggplant<br>4. Squash<br>5. Cucumbers<br>6. Carrots<br>7. Potatoes<br>8. Less commonly known vegetables<br>C. Preparation of seed flat<br>1. Filling the seed flat<br>2. Preplanting treatment<br>3. Sowing the seed<br>4. Care till emergence<br>5. Post emergence care of seedlings<br>6. Thinning - pricking out<br>7. Transplanting into garden<br>D. Preparation of garden bed<br>1. Digging up - turning over<br>2. Breaking up of clods<br>3. Amendments, fertilizers, and soil conditioners<br>4. Leveling and grading<br>5. Layout out rows<br>6. Spacing between plants and between rows<br>E. Direct planting<br>1. Fertilizer - side dressing<br>2. Spraying and dusting<br>3. Watering<br>4. Staking<br>5. Cultivating<br>6. Mulching<br>F. Harvest and storage | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Interpretation of charts and graphs<br>F. Interpretation of diagrams<br>G. Test taking skills | A. Whole numbers<br>B. Fractions<br>C. Percentages<br>D. Formulas | A. Plant growth<br>B. Senescence<br>C. Soil science<br>D. Plant anatomy<br>E. Chemistry<br>F. Entomology | A. The student will be able to recognize the scope of the vegetable industry<br>B. The student will be able to describe vegetable production on local and state levels<br>C. The student will be able to explain the various types of vegetable production<br>D. The student will be able to differentiate between vegetables and their edible parts; leaves, stems, petioles, fruit and seeds<br>E. The student will be able to harden off seedlings<br>F. The student will be able to transplant into the garden<br>G. The student will be able to prepare a seed flat for sowing and sow seeds<br>H. The student will be able to transplant seedlings or plugs into cells in the flat<br>I. The student will be able to identify insect pests of various vegetables<br>J. The student will be able to list the attributes of mulches in vegetable production<br>K. The student will be able to define "damping off" and measures to thwart its spread<br>L. The student will be able to cultivate around vegetables to control weeds |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| | | | | | M. The student will be able to relate the pest control program for a given vegetable<br>N. The student will be able to tell when vegetables are ready for harvest<br>O. The student will be able to complete a work sheet<br>P. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| IV. Identification of fundamental considerations | A. General landscaping objectives<br>1. Aesthetically pleasing<br>2. Low maintenance<br>3. Functinoal yet simple<br>4. Anti pollution<br>5. Increase property value<br>6. Hide eyesores<br>7. Hobbies, sports and recreation<br>8. Correlation of building and grounds<br>9. Shade<br>B. Property development<br>1. Public area<br>a. entrance<br>b. corner planting<br>c. foundation plantings<br>d. base or fill in plantings<br>2. Private area<br>a. outdoor enjoyment<br>b. privacy<br>c. recreation - active and passive<br>3. Service utility area<br>a. tools and supplies storage<br>b. laundry area<br>c. vegetable area<br>d. garbage/refuse area<br>4. Acessways<br>a. walks<br>b. driveways<br>c. steps<br>d. vistas | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Fact/Opinion distinction<br>F. Test taking skills | | | A. The student will be able to discern between form and function<br>B. The student will be able to define and describe the three basic areas of the home landscape<br>C. The student will be able to list general objectives and advantages for developing a landscape plan<br>D. The student will be able to list reasons as to why we landscape<br>E. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| V. Estimate cost | A. Types of charge<br>1. Cost plus<br>2. Contract<br>a. identification of client<br>b. services to be performed<br>c. payment terms<br>d. list of goods supplied and work (labor)<br>e. supervision<br>f. time<br>g. cancellation, substitute provisions<br>h. warranty or replacement provision<br>B. Estimating landscape cost<br>1. Assessment of clients' needs<br>2. Work required to fulfill needs<br>a. labor<br>b. construction<br>c. planting, rough work, finish, clean up details<br>3. Size of job<br>4. Equipment<br>5. Materials (bill of goods)<br>6. Existing conditions<br>a. soil<br>b. location (nearness to home base)<br>c. zoning (development restrictions)<br>C. Overhead<br>1. Compensation<br>2. Taxes<br>3. Hospitalization<br>4. Insurance<br>5. Office maintenance<br>a. furnishings<br>b. telephone<br>c. advertisements<br>d. utility cost<br>e. vehicle up keep and fuel | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Identifying main ideas<br>F. Test taking skills | A. Estimating<br>B. Formulas<br>C. Whole numbers | | A. The student will be able to explain both the cost plus and contract methods of charge<br>B. The student will be able to draw up a simple yet complete contract for services to be provided<br>C. The student will be able to survey clients' needs and interpret those needs into what the student can provide and how much the student will charge<br>D. The student will be able to list overhead expenses that must enter into the estimate<br>E. The student will be able to compute profit<br>F. The student will be able to complete a work sheet<br>G. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| | f. salaries<br>g. legal fees<br>h. power equipment<br>i. hand tools<br>j. liability insurance<br>k. general insurance<br>l. estimating<br>m. selling<br>n. financing<br>o. collecting<br><br>D. Direct cost<br><br>1. Materials<br>a. plants<br>b. fertilizer<br>c. soil amendments<br>d. stakes<br>e. wire<br>f. plastic bags<br>g. wrapping<br>h. burlap<br>i. hose<br>2. Labor<br>a. travel time<br>b. planting, watering in<br>c. clean up<br><br>E. Profit - the bottom line<br><br>F. Application of what can be applied horticulturally | | | | |

**UNIT:** LANDSCAPE - CONTINUED

**TOPIC:** NURSERY OPERATION

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| 1. Establish and prepare a nursery site | A. Terms and definitions<br>1. Container grown<br>2. Field grown<br>3. Liner<br>4. Balled and burlapped<br>5. Vermeer digger<br>B. Determination of what is to be grown<br>1. Market demand<br>2. Supply - quantity<br>C. Soil conditions<br>D. Water and exposure<br>E. Water (irrigation source) | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills<br>G. Interpretation of charts and graphs<br>H. Interpretation of diagrams | A. Whole numbers<br>B. Weights and measures<br>C. Estimating | A. Plant science<br>B. Plant growth<br>C. Water | A. The student will be able to operate a rototiller<br>B. The student will be able to operate a 16HP tractor with attachments<br>C. The student will be able to conduct a survey to assess the demand for nursery products<br>D. The student will be able to read a soil survey map to determine what plant life it can support<br>E. The student will be able to contact county sources to find out more about land use<br>F. The student will be able to produce a container grown plant<br>G. The student will be able to install an irrigation system in the growing area<br>H. The student will be able to hand water plant material<br>I. The student will be able to build rooting beds and seed beds<br>J. The student will be able to ball and burlap a plant<br>K. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| II. Select and apply mulch | A. Terms and definitions - mulch<br>1. cocoa bean hulls<br>2. Shredded sugar cane<br>3. Pine bark<br>4. Cedar mulch<br>5. Licorice root mulch<br>6. Redwood bark<br>7. Stone<br>B. Qualities of mulch<br>1. Cooler in summer<br>2. Warmer in winter<br>3. Prevents drastic change due to alternate freezing and thawing<br>4. Decorative<br>5. Even moisture levels<br>6. Keeps down weeds<br>C. Calculation of amount of mulch needed<br>D. Application<br>E. Cost for putting down<br>F. Price and marketing<br>G. Related products and goods | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Problem solving<br>E. Interpretation of charts<br>F. Test taking skills | A. Whole numbers<br>B. Percentages<br>C. Formulas<br>D. Estimating<br>E. Weights and measures | A. Plant science<br>B. Plant growth<br>C. Water properties<br>D. Weed science | A. The student will be able to identify types of mulch<br>B. The student will be able to list advantages and disadvantages of mulches<br>C. The student will be able to list the attributes of mulch<br>D. The student will be able to explain in what ways mulch is marketed<br>E. The student will be able to calculate the quantity of mulch needed for a particular job<br>F. The student will be able to compute cost of installation<br>G. The student will be able to lay mulch down<br>H. The student will be able to give several examples of what mulch can be<br>I. The student will be able to install edging<br>J. The student will be able to install landscape fabric<br>K. The student will be able to complete a work sheet<br>L. The student will be able to pass a written test |

**UNIT:** LANDSCAPE - CONTINUED

**TOPIC:** NURSERY OPERATION - CONTINUED

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| III. Plant, transplant, prune and trim nursery crops<br><br>IV. Line out nursery stock | A. Terms and definitions<br>1. Shift<br>2. Pinch<br>3. Transplant<br>4. Liner<br>5. Espalier<br>B. Planting into container<br>1. Wire baskets<br>2. Vegetable/fruit baskets<br>3. Plastic containers<br>4. Metal pots<br>C. Seeding of nursery crops<br>1. Culling (roguing)<br>2. Transplanting into nursery beds<br>3. Years in bed, transplanted; example (2-1), (3-0)<br>D. Pruning to shape<br>1. Tight infra structure<br>2. Controlled pyramidal growth<br>3. Trellis for support of espaliered forms<br>4. Heading back<br>5. Chemical pruning<br>E. Weed control<br>F. Insect control<br>G. Inventories<br>1. Use of computers to maintain inventories<br>2. Projected returns<br>3. Projected work assignments | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills | A. Whole numbers<br>B. Weights and measures | A. Plant growth<br>B. Plant anatomy<br>C. Plant nutrition<br>D. Chemistry<br>E. Entomology<br>F. Virology<br>G. Zoology | A. The student will be able to seed coniferous plants<br>B. The student will be able to shift to larger pot sizes<br>C. The student will be able to prune to increase growth of plant<br>D. The student will be able to cultivate around plants<br>E. The student will be able to maintain adequate weed control<br>F. The student will be able to spray for insect pests<br>G. The student will be able to control rodents<br>H. The student will be able to espalier plants into desired forms<br>I. The student will be able to maintain an inventory<br>J. The student will be able to read a trade journal and understand its offerings<br>K. The student will be able to complete a work sheet<br>L. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| I. Select, mix and use growing mediums | A. Terms and definitions<br>1. Soil profile<br>2. Top soil<br>3. Sub soil<br>4. Parent material<br>5. Organic matter<br>6. Humus, compost<br>B. Soil components<br>1. Elements<br>2. Minerals<br>3. Compounds<br>4. Sand, silt and clay<br>5. Loam<br>C. Soil amendments<br>1. Perlite<br>2. Vermiculite<br>3. Sphagmum moss<br>4. Animal manures<br>5. "Green" manure<br>D. Soil organisms<br>1. Micro organisms<br>2. Bacteria<br>a. aerobic<br>b. anaerobic<br>3. Earth worms<br>4. Larvae<br>E. Soilless mixes<br>1. Metro mix<br>2. Vita mix<br>3. Pro mix BX<br>4. Baccto potting soil<br>F. pH concentration<br>1. Acid<br>2. Basic and alkaline<br>3. plant requirements<br>4. Nutrient availability and absorption<br>G. Watering | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills<br>G. Identifying main ideas<br>H. Meanings in context<br>I. Inferences<br>J. Fact/Opinion distinction<br>K. Signal words<br>L. Interpretation of maps, graphs and charts<br>M. Interpretation of diagrams<br>N. Problem solving | A. Whole numbers<br>B. Fractions<br>C. Decimals<br>D. Percentages<br>E. Weights and measures<br>F. Formulas<br>G. Estimating<br>H. Ratio and proportion<br>I. Graphs | A. Soil science and structure<br>B. Osmosis<br>C. Solutinos<br>D. Chemistry<br>E. Absorption<br>F. Biology<br>G. Decomposition<br>H. Fertility<br>I. Plant nutrition | A. The student will be able to take a soil sample<br>B. The student will be able to locate the general area of his/her home on a soil survey map of Ocean County and see the fertility on the chart<br>C. The student will be able to run a test for pH, nitrogen, potassium and phosphorus content<br>D. The student will be able to list nutritive value for various manures<br>E. The student will be able to explain the process of decomposition<br>F. The student will be able to identify the soil components of a given monolith<br>G. The student will be able to add water to a soilless mix to the proper moisture levels<br>H. The student will be able to pot up seedlings, plugs or cuttings into pots<br>I. The student will be able to describe the components of soilless mixes<br>J. The student will be able to identify clay, snad or silt specimens<br>K. The student will be able to complete a work sheet<br>L. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| II. Sterilize soil, tools and benches | A. Tools and equipment - soil sterilizer (Famco)<br>B. Chemicals<br>1. Vapam<br>2. Lf-10 - bacteriostatic disinfectant<br>3. Chlorine bleach<br>4. Methyl biomide<br>5. Chloropicrin<br>C. Steam - 180° F at furthest end of bed for thirty minutes<br>D. Pests/problems<br>1. Insect eggs/larvae<br>2. Weed seeds<br>3. Harmful bacteria<br>4. Fungus, virus<br>D. Terms and definitions<br>1. Pasteurize<br>2. Fumigant<br>3. Leach<br>4. Nematode<br>5. Sterilize<br>F. Soil requirements for steam sterilization<br>1. Adequate moisture<br>2. Soil amendments added before sterilization<br>3. Loosen soil<br>4. Bury steam pipes<br>5. Cover with tarp<br>G. Safety precautions<br>1. Gloves<br>2. Gas masks<br>3. Adequate ventilation<br>4. Proper disposal of chemical containers | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills<br>G. Identifying main ideas<br>H. Meanings in context<br>I. Interpretation of charts and graphs<br>J. Signal words | A. Whole numbers<br>B. Fractions<br>C. Percentages<br>D. Weights and measures<br>E. Formulas<br>F. Ratio and proportion<br>G. Graphs | A. Soil science<br>B. Virology<br>C. Weed science and identification<br>D. Entomology<br>E. Biology<br>F. Properties of water | A. The student will be able to prepare soil texture and add amendments before sterilization<br>B. The student will be able to sterilize benches, wheelbarrows, pots and tools with LF-10 solution or chlorine bleach solution<br>C. The student will be able to use a Famco sterilizer<br>D. The student will be able to load a sterilizer with soil, sterilize and store sterilized soil as not to be contaminated<br>E. The student will be able to sterilize an outdoor bed using a vapam solution<br>F. The student will be able to dispose of used containers in a safe, prescribed manner<br>G. The student will be able to differentiate between the methods of sterilization and prescribe the conditions of their use<br>H. The student will be able to complete a work sheet<br>I. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| III. Sow seeds | A. Terms and definitions<br>1. Germination<br>2. Dormancy<br>3. Monocot<br>4. Dicot<br>5. Viability<br>6. Stratification<br>7. Scarification<br>8. Cotyledon<br>9. Taproot<br>10. Fibrous root system<br>11. Endosperm<br>B. Anatomy of a seed<br>C. Factors in germination<br>1. Water<br>2. Oxygen<br>3. Temperature<br>4. Seed viability<br>5. Light<br>6. Dormancy<br>D. Methods of breaking dormancy<br>1. Stratification<br>2. Scarification<br>3. Soaking<br>4. After-ripening<br>E. Dormancy periods<br>F. Problems in seed germination<br>1. Old seed<br>2. Improper temperatures<br>3. Rodents<br>4. Insects<br>5. Insufficient light<br>6. Improper shade<br>7. Disease<br>8. Improper moisture levels<br>G. Monocots and dicots<br>H. Seed germination determination<br>I. Seed label content<br>1. Origin<br>2. Depth<br>3. Temperature requirements<br>4. Spacing and thinning<br>5. Height and color<br>6. Variety and type | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills<br>G. Identifying main ideas<br>H. Signal words<br>I. Interpretation of charts<br>J. Interpretation of diagrams | A. Whole numbers<br>B. Fractions<br>C. Percentages<br>D. Formulas<br>E. Ratio and proportion<br>F. Graphs | A. Seed anatomy<br>B. Botany<br>C. Temperature<br>D. Light<br>E. Water, moisture levels<br>F. Imbibition<br>G. Dormancy<br>H. Fungus | A. The student will be able to sow seeds in rows or broadcast method<br>B. The student will be able to water in newly planted seeds<br>C. The student will be able to water in with fertilizer or fungicide<br>D. The student will be able to scarify difficult seeds with hard seed coats<br>E. The student will be able to soak difficult seeds, carefully remove and place in rows<br>F. The student will be able to label the diagram of seed parts<br>G. The student will be able to differentiate between monocot and dicot by observing the cotyledons<br>H. The student will be able to distinguish between a taproot and fibrous root system<br>I. The student will be able to cite factor for seed germination<br>J. The student will be able to list methods for breaking dormancy<br>K. The student will be able to define germination and related terms<br>L. The student will be able to direct sow seeds in a garden<br>M. The student will be able to complete a work sheet<br>N. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| IV. Transplant seedlings and cuttings | A. Terms and definitions<br>1. Germination<br>2. Dormancy<br>3. Monocot<br>4. Dicot<br>5. Viability<br>6. Stratification<br>7. Scarification<br>8. Cotyledon<br>9. Taproot<br>10. Fibrous root system<br>11. Endosperm<br>B. Types of seedlings<br>1. Monocot<br>2. Dicot<br>3. Plug<br>4. Broadcast seedling<br>C. Handling of seedlings<br>1. Spotting in flats<br>2. Spotting in flats with dibbled holes<br>D. Removal of seedlings from the flat or plug tray<br>E. Cutting care and handling<br>1. Softwood<br>2. Semi hardwood<br>3. Hardwood<br>F. Labeling the seed flat or cutting flat<br>1. Pencil or marking pen<br>2. Plant<br>3. Type, variety and color<br>4. Date<br>G. Watering and fertilization<br>H. Spacing<br>I. Mix soil | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills<br>G. Interpretation of diagrams | A. Whole numbers<br>B. Percentages<br>C. Ratio and proportion | A. Botany<br>B. Temperature<br>C. Plant physiology<br>D. Soil science | A. The student will be able to transplant plugs of seedlings into market packs at the correct depth<br>B. The student will be able to mix artificial soil mix to the desired moisture level<br>C. The student will be able to spot out cuttings in a nursery row<br>D. The student will be able to label nursery rows or flats of seedlings<br>E. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| V. Vegetatively propagate greenhouse and outdoor plant material | A. Terms and definitions<br>1. Air layering<br>2. Division<br>3. Softwood cuttings<br>a. leaf<br>b. bud<br>c. heel<br>4. Hardwood<br>5. Tip layering<br>6. Grafting<br>a. kinds of grafts<br>b. scion and rootstock<br>7. Meristemming, cloning<br>8. Root division<br>9. Cambial layer<br>10. Callous<br>B. Plant life cycles<br>1. Annual<br>2. Perennial<br>3. Biennial<br>C. Rooting mediums<br>1. Peat moss<br>2. Perlite<br>3. Vermiculite<br>4. Commercial mixes<br>D. Hormones<br>1. Indole butyric acid (IBA)<br>2. Indolacetic acid (IAA)<br>3. Giberellin | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills<br>G. Identifying main ideas<br>H. Meanings in context<br>I. Interpretation of diagrams<br>J. Fact/Opinion distinction<br>K. Signal words<br>L. Interpretation of charts and graphs | A. Percentages<br>B. Ratio and proportion<br>C. Decimals<br>D. Weights and measures | A. Plant anatomy<br>B. Plant marphology<br>C. Plant physiology<br>D. Botany<br>E. Plant nutrition<br>F. Soil science | A. The student will be able to take cuttings from deciduous material, as well as, evergreen plant material<br>B. The student will be able to identify the cambium<br>C. The student will be able to identify a callous<br>D. The student will be able to propagate a flat or ground cover<br>E. The student will be able to define the three types of plant types<br>F. The student will be able to identify the stock and scion<br>G. The student will be able to make a heel cutting<br>H. The student will be able to make a leaf or leaf bud cutting<br>I. The student will be able to propagate plants by roots, stems or leaves<br>J. The student will be able to apply hormone to cuttings<br>K. The student will be able to wound a cutting<br>L. The student will be able to mix up a suitable rooting medium<br>M. The student will be able to air layer a diacaena or ficus plant<br>N. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| VI. Pot, grow and rotate holiday potted plants<br><br>VII. Force bulbs | A. Terms and definitions<br>1. Potted plants<br>2. Pre-finished<br>3. Bulb<br>4. Pre chilled<br>5. Livers<br>6. Cuttings<br>B. Types of potted plants<br>1. Chrysanthemums<br>2. Impatiens<br>3. Begonias<br>5. Lilies<br>6. Caladiums<br>7. Tulips<br>8. Hyacinths<br>9. Daffodils<br>C. Potting medium<br>D. Cold treatment<br>E. Shading/lighting requirements<br>F. Bottom heat and temperature<br>1. Pre cooling/Pre chilling<br>2. Gentle bottom heat<br>G. Growth regulators<br>H. Placement of bulbs or cuttings in pot<br>I. Watering and fertilization<br>J. Insect control<br>K. Wire attachment | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Interpretation of charts and graphs<br>G. Interpretation of diagrams<br>H. Test taking skills | A. Whole numbers<br>B. Percentages<br>C. Weights and measures<br>D. Ratio and proportion | A. Botany<br>B. Chemistry<br>C. Temperature<br>D. Light | A. The student will be able to identify potted plants<br>B. The student will be able to schedule plants grown for one year<br>C. The student will be able to pre cool flower bulbs<br>D. The student will be able to pot up chrysanthemum cuttings into pots<br>E. The student will be able to pinch chrysanthemum cuttings<br>F. The student will be able to pot up bulb plants<br>G. The student will be able to mix and apply a growth regulator<br>H. The student will be able to attach wires to hanging baskets<br>I. The student will be able to treat plants for insects<br>J. The student will be able to moisten potting medium<br>K. The student will be able to control height by applying plant retardants<br>L. The student will be able to complete a work sheet<br>M. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| VIII. Grow cut flower crops (Commercial flower forcing) | A. Terms and definitions<br>1. Forcing<br>2. Single<br>3. Soft pinch<br>4. Hard pinch<br>5. Single stem<br>6. Apical dominance<br>7. Spacing<br>8. Crown bud<br>B. Spacing requirements<br>1. Winter and fall<br>2. Spring and summer<br>C. Support systems<br>D. Soil preparation<br>E. Timing<br>F. Response groups<br>G. Flower dates<br>H. Lighting and shading<br>I. Standards versus spray formation<br>J. Disbudding<br>K. Thinning out<br>L. Harvest<br>M. Grading | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills<br>G. Identifying main ideas<br>H. Meanings in context<br>I. Interpretation of graphs | A. Whole numbers<br>B. Weights and measures<br>C. Ratio and proportion<br>D. Graphs | A. Botany<br>B. Plant nutrition<br>C. Plant growth<br>D. Soil science<br>E. Biology | A. The student will be able to plan a program given a flower date<br>B. The student will be able to raise plant support wires according to the plant's need<br>C. The student will be able to determine the spacing of chrysanthemums given the time of year and lattitude<br>D. The student will be able to soft pinch or hard pinch chrysanthemums<br>E. The student will be able to shade or light a chrysanthemum crop<br>F. The student will be able to disbud chrysanthemums<br>G. The student will be able to remove the "king bud" to induce a more open spray<br>H. The student will be able to prepare the soil with amendments and fungicides for a chrysanthemum crop<br>I. The student will be able to thin out weak shoots<br>J. The student will be able to bunch cut flowers in acceptable market bunches<br>K. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| IX. Water and fertilize plants | A. Terms and definitions<br>1. Water holding capacity<br>2. Water stress<br>3. Checking<br>4. Wilting point<br>5. Osmosis<br>6. Concentration<br>7. Gradient<br>8. Soluble<br>9. Insoluble<br>10. Permeable<br>B. Fertilizers<br>1. Macro nutrients<br>2. Micro nutrients<br>3. Trace elements<br>C. Organic fertilizers<br>1. Manures<br>2. Humus<br>3. Composted products<br>D. Inorganic fertilizers - chemical<br>E. Available forms of inorganic fertilizers<br>1. Liquid concentrate<br>2. Granular with carrier agent<br>3. Powder<br>4. Pelletized<br>F. Calculation of area<br>G. Calculation of p.p.m.<br>H. Application<br>I. Safe practices<br>J. Chemical deficiencies<br>K. Nitrogen, phosphorus and potassium (N.P.K.) | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills<br>G. Identifying main ideas<br>H. Signal words<br>I. Interpretation of charts<br>J. Problem solving<br>K. Interpretation of a key | A. Whole numbers<br>B. Percentages<br>C. Decimals<br>D. Weights and measures<br>E. Formulas<br>F. Ratio and proportion<br>G. Graphs | A. Chemistry<br>B. Hydrology<br>C. Solutions | A. The student will be able to define related terms<br>B. The student will be able to explain ratio found on fertilizer bags, boxes, etc.<br>C. The student will be able to apply liquid fertilizer using a Hozon or Syphonex<br>D. The student will be able to calcualte area in square footage<br>E. The student will be able to compare nutrient levels in various animal manures<br>F. The student will be able to spply fertilizer by measuring out a quantity of granular for each pot<br>G. The student will be able to spread by hand over a bed with calculated quantity of fertilizer<br>H. The student will be able to calculate parts per million<br>I. The student will be able to take necessary safety precautions before handling fertilizers<br>J. The student will be able to differentiate between organic and chemical (inorganic) fertilizer<br>K. The student will be able to key out mineral deficiencies using a simple key<br>L. The student will be able to complete a work sheet<br>M. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| X. Greenhouse growing structure basics | A. Greenhouse growing structures<br>1. Cold frames<br>2. Hot beds<br>3. Lean to<br>4. Ridge and furrow<br>5. Even span<br>6. Uneven span<br>7. Conservatory<br>8. Quonset<br>B. Parts of a greenhouse<br>C. Building considerations<br>1. Fuel<br>2. Close proximity to water source<br>3. Exposure (location)<br>4. Building restrictions (zoning)<br>D. Methods of ventilation<br>1. Manual<br>2. Mechanical - automatic<br>3. Fan-jet system<br>4. Pad and fan<br>5. Radiant energy<br>E. Preparation of soil<br>1. Soil tests<br>2. Conditions<br>3. Amendments<br>4. Organic additions<br>F. Seed sowing preliminaries<br>1. Scheduling a seed sown crop to come in on time<br>2. Seed germination requirements<br>3. Scheduling planting date<br>4. Anticipated market ready date<br>5. Marketing<br>G. Marketing containers<br>1. Individual pots<br>2. Compartmentalized containers<br>3. Seed flat<br>4. Jiffy pots<br>5. Jiffy sevens<br>I. Pricing | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills<br>G. Identifying main ideas<br>H. Interpretation of diagrams | A. Formulas<br>B. Percentages | | A. The student will be able to name the parts of a greenhouse<br>B. The student will be able to describe the various types of greenhouses<br>C. The student will be able to calculate the timing of a floral crop<br>D. The student will be able to construct a simple cold frame or hot bed<br>E. The student will be able to manually open and close greenhouse vents<br>F. The student will be able to list items used in greenhouse products<br>G. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| I. Identification of plant diseases | A. Definition and terms<br>1. Stomata<br>2. Chlorophyll<br>3. Toxins<br>4. Vascular system<br>5. Cankets<br>6. Parasites<br>7. Sapercytes<br>8. Hyphar<br>9. Mycelium<br>10. Spore<br>11. Nernatodes<br>12. Mycoplasms<br>13. Lesion<br>14. Pathogen<br>B. Types of disease<br>1. Pathogenic<br>a. bacterial diseases<br>1.0 soft rot<br>1.1 leaf spot<br>1.2 blight<br>1.3 galls<br>1.4 wilt<br>b. fungal<br>1.0 hyphae<br>1.1 mycelium<br>1.2 spores<br>c. viral<br>1.0 transmission inspect nectors<br>1.1 viral symptoms<br>a.a veinclearing<br>b.b mottling<br>c.c ring spot<br>d.d strealis<br>e.e yellowing<br>f.f stunting, malformation<br>d. mycoplasma<br>e. nematodes - control<br>2. Non pathogenic<br>a. chlorosis<br>b. mineral deficiency<br>C. Control<br>1. Sanitation<br>2. Chemical curative and prevention | A. Functional reading skills<br>B. Vocabulary<br>C. Identifying main ideas<br>D. Meanings in context<br>E. Inferences<br>F. Fact/Opinion distinction<br>G. Following directions<br>H. Outlining and note taking<br>I. Expository writing skills<br>K. Oral communications<br>L. Test taking skills | A. Whole numbers<br>B. Weights and measures<br>C. Formulas<br>D. Graphs<br>E. Ratio and proportion | A. Bacteriology<br>B. Virology<br>C. Biology<br>D. Plant nutrition<br>E. Botany<br>F. Plant anatomy<br>G. Plant morphology<br>H. Plant physiology<br>I. Fungi | A. The student will be able to identify disease organism structures<br>B. The student will be able to differentiate between fungal, viral and bacterial disorders<br>C. The student will be able to explain the fungal process of life<br>D. The student will be able to mix up a fungicide to apply for a designated fungus<br>E. The student will be able to prescribe a program for treatment of a particular greenhouse crop<br>F. The student will be able to match definitions to key words<br>G. The student will be able to complete work sheets and handouts<br>H. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| II. Identify insect pests | A. Terms and definitions<br>1. Metamorphosis<br>2. Incomplete metamorphosis<br>3. Instar<br>4. Larvae<br>5. Predator<br>6. Parasite<br>7. Gradual metamorphosis<br>B. Insect orders and classification<br>1. Beneficial<br>2. Harmful<br>C. Insect control<br>1. Cultural<br>2. Biological<br>3. Chemical<br>4. Physical<br>D. Insect life cycle<br>E. Insect prevention<br>F. Related pests though not true insects<br>1. Spiders, mites<br>2. Slugs, snails<br>3. Birds, animals<br>G. Insect mouth parts<br>1. Chewing<br>2. Sucking<br>3. Piercing<br>4. Lapping, sponging | A. Functional reading skills<br>B. Vocabulary<br>C. Identifying main ideas<br>D. Meanings in context<br>E. Inferences<br>F. Fact/Opinion distinction<br>G. Following directions<br>H. Outlining and note taking<br>I. Signal words<br>K. Oral communications<br>L. Interpretation of maps, graphs and charts<br>M. Interpretation of diagrams<br>N. Spelling<br>O. Test taking skills | A. Whole numbers<br>B. Ratio and proportion<br>C. Graphs<br>D. Estimating<br>E. Weights and measures | A. Entomology<br>B. Parasitism<br>C. Botany<br>D. Plant anatomy | A. The student will be able to explain no metamorphosis, gradual metamorphosis and complete metamorphosis<br>B. The student will be able to give examples of each type of metamorphosis<br>C. The student will be able to list the major insect orders and give examples of each<br>D. The student will be able to list the insects upon which man relies upon for industry<br>E. The student will be able to explain the scope of insect damage in agricultural losses in dollars<br>F. The student will be able to list occupations associated with pest control<br>G. The student will be able to read a label on a package of insecticide<br>H. The student will be able to complete work sheets and handouts<br>I. The student will be able to pass written tests and quizzes |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| III. Identify weeds | A. Terms and definitions<br>1. Annual<br>2. Perennial<br>3. Biennial<br>4. Taproot<br>5. Fibrous<br>6. Monocot<br>7. Dicot<br>8. Toxic<br>9. Pre-emergence<br>10. Post emergence<br>11. Herbicide<br>12. Weed<br>13. Residue<br>B. Control<br>1. Mechanical - tools<br>2. Chemical<br>a. direct contact<br>b. systemic<br>c. pre-emergence<br>d. post emergence<br>3. Mulch<br>4. Burning/flaming<br>C. Herbicides<br>1. Selective<br>2. Non-selective<br>D. Weeds<br>1. Broadleaf<br>2. Grassy weeds | A. Functional reading skills<br>B. Vocabulary<br>C. Identifying main ideas<br>D. Meanings in context<br>E. Inferences<br>F. Fact/Opinion distinction<br>G. Following directions<br>H. Outlining and note taking<br>I. Signal words<br>J. Problem solving<br>K. Interpretation of graphs<br>L. Test taking skills | A. Percentages<br>B. Formulas<br>C. Weights and measures<br>D. Decimals<br>E. Whole numbers | A. Plant anatomy<br>B. Plant taxonomy<br>C. Botany<br>D. Biochemistry<br>E. Plant morphology | A. The student will be able to distinguish between annual, perennial and biennial weeds<br>B. The student will be able to define a weed<br>C. The student will be able to compare and contrast dicot and monocot<br>D. The student will be able to differentiate between pre-emergent and post emergent treatments<br>E. The student will be able to list the types of chemical controls for treating weeds<br>F. The student will be able to control weeds by hoeing and hand pulling<br>G. The student will be able to list the parts of a grass plant<br>H. The student will be able to prescribe a program for the treatment of crabgrass<br>I. The student will be able to sing the praises of mulch<br>J. The student will be able to list eight types of mulch<br>K. The student will be able to complete work sheets and handouts<br>L. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| IV. Calculate area and rate of application | A. Determination of area<br>1. Rectangle or square - length times width<br>2. Circle - Pi $r^2$ Pi = 3.14 or $\frac{22}{7}$<br>3. Triangle - ½ base times height<br>B. Liquid/dry measurement<br>C. Ratio and proportion<br>D. Cubic calculation | A. Functional reading skills<br>B. Identifying main ideas<br>C. Following directions<br>D. Oral communications<br>E. Interpretation of graphs and charts<br>F. Problem solving<br>G. Test taking skills | A. Ratio and proportion<br>B. Liquid and dry measurement<br>C. Formulas<br>D. Estimating<br>E. Percentages<br>F. Cubic calculation | | A. The student will be able to convert ounces into smaller units/fractions of tablespoons or teaspoons<br>B. The student will be able to reduce tablespoons to teaspoons and fractions thereof<br>C. The student will be able to calculate the square footage of various land parcels<br>D. The student will be able to tape distances and read a scale<br>E. The student will be able to measure pesticides using proper safety precautions<br>F. The student will be able to complete a work sheet<br>G. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| V. Apply chemicals - dust and liquids | A. Tools and materials<br>1. Hose end sprayer<br>2. Trombone sprayer<br>3. Compression sprayer<br>4. Tank sprayer<br>5. Cyclone spreader<br>6. Drop-type spreader<br>7. Dry granular fertilizer<br>8. Granular dolomitic limestone<br>9. Liquids<br>10. Dusts and powders<br>11. Measuring spoons<br>12. Scale<br>13. Graduated liquid measure<br>B. Safety equipment<br>1. Goggles, safety glasses<br>2. Respirator<br>3. Gas mask<br>4. Rubber boots<br>5. Protective clothing<br>6. Rubber gloves<br>C. Eyewash and safety shower use<br>D. Measurement of liquids and powders<br>E. Mixing with water<br>F. Application<br>G. Clean-up of apparatus<br>H. Body clean up<br>I. Labeling<br>1. Warning<br>2. Danger<br>3. Caution<br>4. Toxic<br>5. Restricted use | A. Functional reading skills<br>B. Vocabulary<br>C. Identifying main ideas<br>D. Meanings in context<br>E. Inferences<br>F. Interpretation of diagrams<br>G. Following directions<br>H. Outlining and note taking<br>I. Interpretation of graphs and charts<br>J. Oral communications<br>K. Problem solving<br>L. Test taking skills | A. Whole numbers<br>B. Common fractions<br>C. Formulas<br>D. Ratio and proportion<br>E. Weights and measures<br>F. Decimals<br>G. Percentages | A. Chemistry<br>B. Temperature<br>C. Pressure/compression<br>D. Plant nutrition | A. The student will be able to mix and apply shading compound to greenhouse grass<br>B. The student will be able to apply dry fertilizer to a lawn area<br>C. The student will be able to apply a pesticide to greenhouse plants<br>D. The student will be able to apply herbicide to lawn and shrub bed areas<br>E. The student will be able to complete a work sheet<br>F. The student will be able to pass a written test and quiz |

UNIT: FLORISTRY

TOPIC: DESIGN



| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| I. Identify principles of design | A. Principles of design<br>1. Focal point<br>2. Graduation<br>3. Sequence<br>B. Achievement of unity<br>1. Controlling design<br>2. Line, primary, secondary and tertiary<br>3. Pattern<br>C. Balance<br>1. Symmetrical<br>2. Assymmetrical<br>3. Weight<br>4. Volume<br>5. Formal versus informal<br>D. Scale<br>E. Simplicity<br>F. Principles of composition<br>1. Transition<br>2. Opposition (contrast)<br>3. Repetition<br>4. Rhythm<br>5. Harmony<br>G. Color<br>1. Primary<br>2. Seconary<br>3. Monochromatic<br>4. Complimentary<br>5. Split complimentary<br>6. Hues<br>7. Tints<br>8. Shades | A. Functional reading skills<br>B. Following directions<br>C. Outlining and note taking<br>D. Oral communications<br>E. Vocabulary<br>F. Test taking skills<br>G. Interpretation of diagrams<br>H. Interpretation of charts | | | A. The student will be able to decipher elements of good design versus poor design<br>B. The student will be able to gain a sense of proportion<br>C. The student will be able to differentiate between formal and informal design concepts<br>D. The student will be able to cite examples of symmetry and asymmetry<br>E. The student will be able to list principles of design<br>F. The student will be able to pass a written test |

**UNIT:** FLORISTRY - CONTINUED

**TOPIC:** FLORISTRY MECHANICS

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| I. Wiring and taping of flowers | A. Proper insertion of wire through calyx of flower<br>B. Proper wrapping with floral tape to hide mechanics of wiring process<br>C. Use of proper tools to cut wire to appropriate length<br>D. Selection of wire gauge for designated type of flowers<br>1. Heavier wire for more durable flowers<br>2. Thinner wire for fragile delicate flowers<br>E. Ability to judge quality of bloom(s) | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Sketching<br>F. Test taking skills | A. Spatial relationship of similar forms<br>B. Sequencing/size<br>C. Linear measurement<br>D. Graphs | A. Anatomy of flower and stem<br>B. Properties of metals - metallurgy<br>C. Senescence of flowers<br>D. Temperature<br>E. Bacteria<br>F. Dessication | A. The student will be able to construct a simple wired flower, measure the correct length of the proper wire and tape over to conceal mechanics<br>B. The student will be able to store the completed wired flower at the proper temperature for optimum lasting ability<br>C. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| II. Green-up of centerpieces | A. Selection of proper container and size of floral foam<br>B. Technique involved in proper insertion of greens - plant material floral foam<br>C. Proper use of the knife to make a sharp diagonal cut in the stem or pedicel of the leaf<br>D. Proper sharpening of the knife to insure clean cuts<br>E. Addition of floral preservation to supply sugar and anti bacterial agents<br>F. Proper holding of plant material and cutting procedure to minimize danger of knife cuts<br>G. Calculation of supplies for number of centerpieces to be constructed | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Sketching | A. Geometry<br>B. Measurement<br>C. Space relations<br>D. Liquid measurement<br>E. Dry measurement | A. Plant anatomy<br>B. Plant physiology and morphology<br>C. Absorption<br>D. Photosynthesis<br>E. Respiration<br>F. Ethylene formation<br>G. Bacteria<br>H. Temperature | A. The student will be able to select the proper size container for assignment given<br>B. The student will be able to measure floral foam and place in container adding the proper amount of floral preservative<br>C. The student will be able to construct a globular centerpiece that can be viewed equally from all sides<br>D. The student will be able to store the greens at the proper conditions for optimum lasting ability<br>E. The student will be able to sharpen a knife to maintain a good cutting edge |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| III. Bow construction | A. Types of ribbon<br>1. Satin<br>2. Moire<br>3. Fabric<br>4. Plastic<br>5. Polypropylene<br>6. Miscellaneous<br>B. Gauges of ribbon<br>1. Corsage - 2, 3 and 5<br>2. Plant - 9<br>3. Larger work - 40 and 100<br>C. Flat bow construction<br>1. Six loops plus one center button<br>2. Eight loops plus one center button<br>D. Pompon bow<br>1. Side to side<br>2. Hand held gathered<br>E. Individual loop construction<br>F. Uses for bows<br>1. Packages<br>2. Arrangements<br>3. Potted plants<br>4. Sympathy work<br>5. Wedding work<br>G. Selection of proper wire for particular use or task<br>H. Storage of pre-made bows<br>I. Proper use of tools to cut wire, ribbon, etc.<br>J. Gauges of wire<br>K. Use of wired pricks for loop construction<br>L. Attaching bows to arrangements, boxes, baskets, etc. | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Sketching<br>F. Worksheet and handout<br>G. Test taking skills | A. Sizes - gauge<br>B. Linear measurement<br>C. Geometry<br>D. Proportion<br>E. Graphs | A. Metallurgy<br>B. Temperature | A. The student will be able to construct a corsage bow in proportion to the size flowers being utilized<br>B. The student will be able to construct a flat bow designed for pews or corsages<br>C. The student will be able to construct a pompon bow for a rose box or floral arrangement<br>D. The student will be able to construct individual ribbon loops for use in funeral work<br>E. The student will be able to construct a large bow entirely from individual ribbon loops<br>F. The student will be able to affix bows to arrangements, boxes, baskets, etc.<br>G. The student will be able to store bows away from humidity, dust and dirt<br>H. The student will be able to complete a handout/worksheet<br>I. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| IV. Wrapping and trimming potted plants | A. Items useful in wrapping and trimming plants<br>1. Cellophane<br>2. Polypropylene<br>3. Embossed floral foils<br>4. Colored tissue papers<br>5. Straw hats, etc.<br>B. Plants sold in retail outlets<br>1. Green plants - floor<br>2. Green plants - dish garden<br>3. Green plants - each<br>4. Flowering plants<br>a. african violets<br>b. geraniums<br>c. chrysanthemums<br>d. poinsettias<br>e. Easter/spring time plants<br>f. azaleas<br>C. Equipment and tools used in wrapping<br>1. Plant sleeves<br>2. Stapler<br>3. Cellophane tape<br>4. Plant wrapping stand<br>D. Methods and techniques<br>1. Folding of foil<br>2. Double wrapping<br>3. Prefab pot covers<br>E. Making plants with unattractive bottoms fuller looking<br>F. Color coordination | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Test taking skills | A. Measurement<br>B. Size relationships | | A. The student will be able to properly conceal the growing container of a potted plant by wrapping decorative pot wrapping around its base<br>B. The student will be able to place the potted plant within a plant sleeve for safe shipping and travel<br>C. The student will be able to determine the proper size sleeve to use with the pot<br>D. The student will be able to complete a work sheet<br>E. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| V. Cutting and preparing newly arrived flowers and greens | A. Types of flowers<br>1. Temperate<br>a. roses<br>b. chrysanthemums<br>c. snapdragons<br>d. carnations<br>e. gladioli<br>2. Tropical<br>B. Temperature care of flowers and foliage<br>1. Cold storage (40° F)<br>2. Warm storage (55° F) or room temperature<br>C. Use of floral preservatives<br>D. Preparation and/or removal of stems and leaves<br>E. Knive handling and safety<br>F. Determination/selection of proper vase height and quantity of blooms placed therein<br>G. Special considerations, methods for individual flowers<br>1. Anthuriums<br>2. Gerbera daisies<br>3. Stephanotis<br>4. Phalaenopsis orchids<br>5. Cymbidium orchids<br>6. Cattleya orchids<br>7. Football (standard) mums<br>8. Lilac | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Inferences<br>F. Test taking skills | A. Dry measurement<br>B. Liquid measurement<br>C. Size relationship | A. Absorption<br>B. Respiration<br>C. Ethylene formation<br>D. Temperature<br>E. Climate/humidity<br>F. Bacteria<br>G. Senescence | A. The student will be able to identify the five basic floristry flowers and five staple greens of the floristry industry<br>B. The student will be able to determine proper height of vase related to products received<br>C. The student will be able to clean off all foliage and blooms that are injured<br>D. The student will be able to differentiate between cool storage greens and flowers and warm temperature flowers and greens<br>E. The student will be able to place the correct number of blooms per container<br>F. The student will be able to safely cut on an angle, all stems going into water<br>G. The student will be able to prepare and meet the storage needs of flowers and greens requiring special conditions<br>H. The student will be able to complete a work sheet<br>I. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| VI. Wrap cut flowers and box flowers | A. Prepare boxes for flowers with tissue<br>B. Select proper box for designated amount of blooms<br>C. Measure paper length for wrapping<br>D. Materials and tools<br>1. Cellophane<br>2. Shredded wax paper<br>3. Waxed tissue paper<br>4. Boxes for flowers<br>5. Stapler<br>6. Ribbon, bows<br>7. Care cards<br>8. Preservative enclosure<br>9. Water tubes<br>E. Fill in sentiment card properly<br>F. Address package | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Inferences<br>F. Test taking skills | A. Linear measurement<br>B. Whole numbers<br>C. Percentages<br>D. Mark up | A. Absorption<br>B. Senescence<br>C. Humidity<br>D. Respiration | A. The student will be able to construct pre-fab boxes<br>B. The student will be able to artfully arrange greens and flowers in box or on paper<br>C. The student will be able to enclose care cards<br>D. The student will be able to wrap, staple and address cards to party for delivery<br>E. The student will be able to complete handout and work sheet<br>F. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| VII. Judge quality of plant and flower material | A. Fresh flowers and greens<br>1. Inspect for insects<br>2. Mechanical injury<br>3. Burned or yellowing leaves<br>4. Check rose buds for tightness and/or "blueing"<br>5. Check flowers received against bill<br>B. Plant material<br>1. Check for plant pests<br>2. Check for watering<br>3. Check for damage<br>4. Check for quantities and sizes against bill<br>C. Age of particular flowers<br>D. Check for billing errors<br>E. Determine price/cost | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Inferences<br>F. Test taking skills | A. Whole numbers<br>B. Multiplication<br>C. Division | A. Senescence<br>B. Identification of<br>1. Insects<br>2. Disease<br>3. Decay<br>C. Plant anatomy<br>D. Botany | A. The student will be able to identify insects<br>B. The student will be able to note age or "blueing" of roses<br>C. The student will be able to discern between several classes of chrysanthemums, which is oldest<br>D. The student will be able to check inventories<br>E. The student will be able to complete a work sheet<br>F. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| VIII. Identify commonly used flowers and foliages | A. Flowers<br>1. Roses<br>2. Chrysanthemums<br>3. Carnations<br>4. Gladioli<br>5. Snapdragons<br>6. Iris<br>7. Tulips<br>8. Daisies<br>9. Asters<br>10. Gerberas<br>11. Freesia<br>12. Miniature carnations<br>13. Filler flowers<br>14. Miscellaneous flowers<br>B. Marketing quantities<br>C. Grades<br>D. Wholesale costs versus retail costs<br>E. Mark-up<br>F. Foliages<br>1. Lemon (salal)<br>2. Huckleberry<br>3. Emerald<br>4. Tiki<br>5. Teepee<br>6. Eucalyptus<br>7. Asparagus fern<br>8. Ti leaves<br>9. Coffee foliage<br>10. Baker fern<br>11. Galax leaves<br>12. Miscellaneous foliages<br>G. Color range of each flower<br>H. Commonly used named varieties<br>I. Orchids | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Inferences<br>F. Work sheet<br>G. Test taking skills | A. Percentages<br>B. Computation<br>C. Division<br>D. Whole numbers<br>E. Fractions | A. Plant taxonomy<br>B. Botany | A. The student will be able to identify ten of the most commonly used flowers in the floral industry<br>B. The student will be able to identify ten of the most commonly used foliages<br>C. The student will be able to determine mark-up<br>D. The student will be able to list the flowers and in what quantities they are marketed<br>E. The student will be able to list the grades employed by the floral industry as applied to carnations, roses, cymbidium orchids and gladioli<br>F. The student will be able to determine price per stem<br>G. The student will be able to complete a work sheet<br>H. The student will be able to pass a written test and quiz |

**UNIT:** FLORISTRY - CONTINUED

**TOPIC:** FLOWER ARRANGEMENT CONSTRUCTION

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| I. All around centerpiece | A. Design principles<br>1. Scale<br>2. Proportion<br>3. Rhythm<br>4. Repetition<br>5. Harmony<br>6. Balance<br>7. Depth<br>8. Continuity<br>B. Mechanics<br>1. Green-up<br>2. Stem insertion<br>3. Floral foam/container<br>C. Selection of container<br>D. Primary flowers<br>1. Single blooms<br>2. Stalk or spike<br>E. Filler flowers<br>1. Multiple flowers<br>2. Small flowers<br>F. Insertion of greens<br>G. Color harmonies/schemes<br>1. Monochromatic<br>2. Complimentary<br>3. Triadic color scheme<br>4. Secondary colors<br>5. Hues<br>6. Tints<br>7. Shades | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Inferences<br>F. Vocabulary<br>G. Spelling<br>H. Sketching<br>I. Audio visual aids<br>J. Work sheet/handout<br>K. Test taking skills | A. Computation of costs<br>B. Fractions<br>C. Whole numbers<br>D. Sequencing | A. Absorption<br>B. Ethylene formation<br>C. Respiration<br>D. Temperature<br>E. Bacterial growth | A. The student will be able to construct an all around centerpiece to be viewed equally from all sides<br>B. The student will be able to construct an all around arrangement in an acceptable amount of time<br>C. The student will be able to price the arrangement given an hourly wage and work up formula<br>D. The student will be able to clean up all materials and return tools to cabinets, drawers, etc.<br>E. The student will be able to complete a work sheet<br>F. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| II. One sided or front facing arrangement | A. Triangular form or semi-circular with green up on one side<br>B. Proper insertion of floral foam<br>C. Proper base selection as related to design to be mastered<br>D. Design principles<br>1. Scale<br>2. Proportion<br>3. Rhythm<br>4. Repetition<br>5. Harmony<br>6. Balance<br>7. Depth<br>8. Continuity<br>E. Mechanics<br>1. Green-up<br>2. Stem insertion<br>3. Floral foam/container<br>F. Selection of container<br>G. Primary flowers<br>1. Single blooms<br>2. Stalk or spike<br>H. Filler flowers<br>1. Multiple flowers<br>2. Small flowers<br>I. Insertion of greens<br>J. Color harmonies/schemes<br>1. Monochromatic<br>2. Complimentary<br>3. Triadic color scheme<br>4. Secondary colors<br>5. Hues<br>6. Tints<br>7. Shades | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Inferences<br>F. Vocabulary<br>G. Spelling<br>H. Sketching<br>I. Audio visual aids<br>J. Work sheet/handout<br>K. Test taking skills | A. Computation of costs<br>B. Fractions<br>C. Whole numbers<br>D. Sequencing | A. Absorption<br>B. Ethylene formation<br>C. Respiration<br>D. Temperature<br>E. Bacterial growth | A. The student will be able to construct a front facing arrangement suitable for a hospital window or table<br>B. The student will be able to construct an arrangement that can be used for church, funeral or wedding occasions<br>C. The student will be able to construct a front facing arrangement in a prescribed amount of time equal to industry accepted standards<br>D. The student will be able to clean up area of tools and materials<br>E. The student will be able to price the arrangement he/she designed given design labor, materials fees and mark-up<br>F. The student will be able to complete a work sheet<br>G. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| III. Boutonniere construction | A. Taping/wiring of flowers<br>B. Proper selection of wire/ tape and materials<br>C. Proper conditioning of floral and foliage materials<br>D. Bows suited to corsages<br>E. Use of water tubes, anti-dessicant sprays to control wilting<br>F. Presentation, wrapping, boxing, etc.<br>G. Selection of pin<br>H. Boxing, wrapping procedure | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Inferences<br>F. Vocabulary<br>G. Spelling<br>H. Sketching<br>I. Audio visual aids<br>J. Test taking skills | A. Linear measurement<br>B. Percentages<br>C. Mark-up<br>D. Sequencing/size | A. Dessication<br>B. Senescence<br>C. Absorption<br>D. Plant taxonomy<br>E. Plant anatomy | A. The student will be able to construct a boutonniere using a large single carnation<br>B. The student will be able to construct a boutonniere using miniature carnations, an open bloom and a bud showing color<br>C. The student will be able to construct a simple boutonniere using more than one type of flower and filler flower i.e., baby's breath<br>D. The student will be able to construct a simple corsage by adding a bow to the boutonniere<br>E. The student will be able to place in box, or cellophane bag and add proper pin<br>F. The student will be able to pass a written test and quiz<br>G. The student will be able to complete cost-out |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| IV. Orchid corsage | A. Tools and materials<br>1. Wire<br>2. Netting (table)<br>3. Water tubes<br>4. Floral tape<br>5. Floral shears<br>6. Ribbon scissors<br>7. Ribbon<br>8. Box or cellophane<br>9. Bag, wristlet band<br>10. Filler flowers<br>11. Silk flowers<br>B. Proper care of orchid from arrival from grower or wholesaler<br>C. Use of tulle to make nylon puffs or filler and backing<br>D. Proper wiring of orchid, taping and water tube if necessary<br>E. Types of orchids utilized in corsage work<br>1. Cymbidium<br>2. Phalaenopsis<br>3. Paphiopedilum<br>4. Dendrobium<br>5. Cattleya and similar hybrids<br>F. Bow construction for orchid corsages | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Inferences<br>F. Vocabulary<br>G. Spelling<br>H. Sketching<br>I. Audio visual aids<br>J. Work sheet<br>K. Test taking skills | A. Linear measurement<br>B. Computation of costs<br>C. Determining mark-up percentages<br>D. Determination of cost per each item (fractions) | A. Plant taxonomy<br>B. Plant physiology and marpliology<br>C. Senescence | A. The student will be able to construct an orchid corsage intended for use on a dress or purse<br>B. The student will be able to construct an orchid corsage to be worn on the wrist<br>C. The student will be able to construct an orchid corsage without the use of water tubes<br>D. The student will be able to construct an orchid corsage to be worn in the hair<br>E. The student will be able to construct nylon puffs that can be incorporated into the orchid corsage<br>F. The student will be able to make an orchid corsage combining silk flowers as filler material<br>G. The student will be able to complete a work sheet<br>H. The student will be able to complete cost-out<br>I. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| V. Corsage, multiple flowers | A. Tools and materials<br>1. Assorted flowers<br>2. Ribbon, tape, wire and pins<br>3. Water tubes, optional<br>4. Filler material<br>a. baby's breath<br>b. silk flowers<br>c. dried material<br>d. tulle puffs<br>5. Wristlet bands<br>6. Box or cellophane bag<br>B. Equipment<br>1. Floral shears<br>2. Ribbon scissors<br>3. Wristlet bands<br>C. Proper wiring and taping techniques<br>D. Proper placement of flowers in relation to size, state of maturity and color | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Inferences<br>F. Vocabulary<br>G. Spelling<br>H. Sketching<br>I. Audio visual aids<br>J. Test taking skills | A. Computation of costs<br>B. Fractions<br>C. Mark-up<br>D. Percentages | A. Plant taxonomy<br>B. Absorption<br>C. Climate/humidity<br>D. Senescence | A. The student will be able to construct a corsage using several spring flowers<br>B. The student will be able to construct a miniature carnation corsage using blooms of various ages: bud showing color up to mature flower<br>C. The student will be able to assemble a miniature carnation corsage made for the wrist<br>D. The student will be able to assemble a multi-colored corsage designed to be worn on the wrist<br>E. The student will be able to determine a price for a corsage given cost of materials, labor and rate of mark-up<br>F. The student will be able to place corsage in cellophane bag or box<br>G. The student will be able to differentiate between fresh flowers and those flowers showing defects as of older age<br>H. The student will be able to construct a corsage using a wrist band<br>I. The student will be able to complete a work sheet<br>J. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| VI. Funeral basket or arrangement | A. Tools and materials<br>1. Sharp knife<br>2. Wire shears<br>3. Pruning shears<br>4. Paper mache container<br>5. Plastic container with handle<br>6. Flowers commonly used in funeral baskets<br>B. Box construction<br>C. Placement of foam or material in container<br>D. "Green-up" using palm, huckleberry, salal, baker fern, etc.<br>E. Use of gladioli, large standard mums, spray pompons, carnations and filler material to form fan shape or semi-circular form<br>F. Addition of bow<br>G. Proper placement of flowers<br>H. Design principles<br>1. Scale<br>2. Proportion<br>3. Rhythm<br>4. Repetition<br>5. Harmony<br>6. Balance<br>7. Depth<br>8. Continuity<br>I. Flower longevity<br>J. Proper completion of memorial card sentiment and description of floral piece<br>K. Attach ribbon and script | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Inferences<br>F. Vocabulary<br>G. Spelling<br>H. Sketching<br>I. Audio visual aids<br>J. Test taking skills | A. Computation of cost<br>B. Mark-up and pricing<br>C. Fractions<br>D. Whole numbers<br>E. Percentages | A. Plant anatomy<br>B. Plant taxonomy<br>C. Botany<br>D. Flowers/foliage<br>E. Respiration<br>F. Ethylene formation<br>G. Absorption<br>H. Senescence | A. The student will be able to design a flower arrangement in a paper mache container suitable for a funeral<br>B. The student will be able to describe the contents of the funeral piece (basket) on the back of the enclosure card<br>C. The student will be able to determine the cost given labor, materials and mark-up<br>D. The student will be able to construct a funeral basket close to or equal to the time equivalent as performed in a flower shop<br>E. The student will be able to list all items utilized<br>F. The student will be able to itemize costs<br>G. The student will be able to correctly load the funeral basket onto a delivery vehicle<br>H. The student will be able to attach script to a ribbon personalizing the completed design<br>I. The student will be able to complete handouts<br>J. The student will be able to pass a written test |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
|---|---|---|---|---|---|
| VII. Funeral spray | A. Tools and materials<br>1. Sharp knife<br>2. Cards, styrofoam<br>3. Spray bar with easel<br>4. Dixon pins<br>5. Flowers and greens<br>6. Water tubes and picks<br>7. Ribbon/script/card<br>B. Bow construction<br>C. Placement of flowers<br>D. Green-up<br>E. Use of design principles<br>F. Flower life<br>G. Description of spray<br>I. Color coordination | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Inferences<br>F. Vocabulary<br>G. Spelling<br>H. Sketching<br>I. Audio visual aids<br>J. Handouts<br>K. Test taking skills | A. Sequencing<br>B. Linear measurement<br>C. Geometry<br>D. Judging distances<br>E. Percentages<br>F. Mark-up | A. Floral anatomy<br>B. Flowers<br>C. Floral physiology<br>D. Senescence/longevity | A. The student will be able to design a spray using flowers commonly used in spray work<br>B. The student will be able to wire pick and tube flowers used in spray work<br>C. The student will be able to correctly describe piece composition on back of memorial card<br>D. The student will be able to attach script to ribbon and affix to spray<br>E. The student will be able to construct bows and/or boxes<br>F. The student will be able to green-up in a diamond or teardrop shape - the basic outline of the spray<br>G. The student will be able to affix spray to easel<br>H. The student will be able to compute mark-up and price out<br>I. The student will be able to construct a spray suitable for a grave at Christmas tide<br>J. The student will be able to pass a written test and quiz |

| Task | Theory | Communication Skills | Mathematics Skills | Science Knowledge | Student Outcome |
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| VIII. Wreath | A. Tools and materials<br>1. Pruning shears<br>2. Knife<br>3. Greens, foliage<br>4. Flowers<br>a. live<br>b. artificial<br>5. Wreath form<br>a. styrofoam<br>b. straw<br>c. wire<br>d. Hillman<br>B. Bow construction<br>C. Color coordination<br>D. Basic design principles<br>E. Wiring and taping<br>F. Proper placement of materials into form<br>G. Addition of memorial card<br>H. Affix script<br>I. Describe wreath contents<br>J. Hillman wreath machine | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Inferences<br>F. Vocabulary<br>G. Spelling<br>H. Sketching<br>I. Audio visual aids<br>J. Handouts<br>K. Test taking skills | A. Computation of costs<br>B. Mark-up pricing<br>C. Fractions<br>D. Whole numbers<br>E. Percentages | A. Plant anatomy<br>B. Respiration<br>C. Ehylene formation<br>D. Absorption<br>E. Senescence<br>F. Plant taxonomy<br>G. Flowers/foliage | A. The student will be able to design a wreath suitable for a memorial service<br>B. The student will be able to design a wreath suitable for a door at yuletide<br>C. The student will be able to determine the cost of mark-up given labor, materials and mark-up percentage<br>D. The student will be able to wire ornaments and pine cones for inclusion on a wreath<br>E. The student will be able to operate a Hillman wreath machine in a safe manner<br>F. The student will be able to attach a wreath to a wall, door or easel<br>G. The student will be able to design a bow in proportion to wreath constructed<br>H. The student will be able to complete a work sheet<br>I. The student will be able to pass a written test and quiz |

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| IX. Colonial bouquet<br>A. Wire method<br>B. Foam method | A. Tools and materials<br>1. Gauges of wire<br>2. Ribbon, satin leaves<br>3. Floral tape<br>4. Foam bouquet holder<br>5. Lace collar<br>B. Flowers and foliages<br>C. Basic design principles<br>D. Color coordination<br>E. Wiring and taping<br>F. Proper insertion and placement of flowers and foliage into foam holder<br>G. "Green-up" of foam holder<br>H. Addition of streamers and collar | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Inferences<br>F. Vocabulary<br>G. Spelling<br>H. Sketching<br>I. Audio visual aids<br>J. Test taking skills | A. Computation of costs<br>B. Mark-up/pricing<br>C. Fractions<br>D. Whole numbers<br>E. Sequencing<br>F. Percentages<br>G. Time telling skills | A. Plant anatomy<br>B. Plant taxonomy<br>C. Botaony<br>D. Flowers/foliage<br>E. Respiration<br>F. Ethylene formation<br>G. Absorption<br>H. Senescence | A. The student will be able to design a colonial bouquet to be used as a "throw away" bouquet<br>B. The student will be able to design a colonial bouquet using carnations and/or chrysanthemums<br>C. The student will be able to describe the contents of the bouquet and compute the cost given labor and material figures<br>D. The student will be able to design a colonial bouquet using silk, dried and/or fresh flowers<br>E. The student will be able to design a colonial bouquet as above using foam<br>F. The student will be able to construct a colonial bouquet utilizing both wire and foam methods and compare costs and time trials<br>G. The student will be able to complete a work sheet<br>H. The student will be able to pass a written test |

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| X. Cascade bouquet<br>A. Wire method<br>B. Foam method | A. Tools and materials<br>1. Wire gauges<br>2. Ribbon<br>3. Wire shears, cutters<br>4. water tubes<br>B. Flowers, foliages<br>C. Color coordination<br>D. Basic design principles<br>E. Wiring and taping skills<br>F. Placement of wired flowers<br>G. Ribbon wrapping of stems and wires to finish off bouquet<br>H. Bouquet foam method | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Inferences<br>F. Vocabulary<br>G. Spelling<br>H. Sketching<br>I. Audio visual aids<br>J. Test taking skills | A. Whole numbers<br>B. Sequencing<br>C. Fractions<br>D. Whole numbers<br>E. Percentages<br>F. Time telling skills | A. Plant anatomy<br>B. Plant taxonomy<br>C. Btaony<br>D. Flowers/foliages<br>E. Respiration<br>F. Ethylene formation<br>G. Absorption<br>H. Senescence | A. The student will be able to design a multi-cascaded bouquet<br>B. The student will be able to design a large bouquet with cascade or graduated flower sizes<br>C. The student will be able to price out/mark-up<br>D. The student will be able to construct both types of cascades and compare costs and time trials<br>E. The student will be able to pass a written test and quiz |

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| I. Estimate price and cost of materials used | A. Invoices from wholesalers<br>1. Checking items purchased against invoices<br>2. Cross multiplying of items/bunch, lot<br>3. Addition of total items<br>B. Inventory of items used<br>C. Inventory of items unusable or damaged<br>D. Calculation of items used per product produced<br>1. 2½ to 3 times mark-up for fresh and perishable items<br>2. 2 times mark-up on materials | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Test taking skills<br>F. Audio visual aids | A. Division<br>B. Addition<br>C. Subtraction<br>D. Multiplication<br>E. Percentages<br>F. Mark-up<br>G. Fractions<br>H. Whole numbers | | A. The student will be able to to check in items against bills<br>B. The student will be able to cross multiply linearly<br>C. The student will be able to add columns of numbers<br>D. The student will be able to check for errors<br>E. The student will be able to compute mark-up<br>F. The student will be able to price and affix labels |

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| II. Maintain inventory of stock and supplies | Compose a master list of all items and supplies found in the florist shop<br>1. Tools and equipment<br>a. hot glue gun<br>b. hand staplers<br>c. knives<br>d. ribbon and wire shears<br>e. pliers<br>f. pick machine<br>g. Hillman wreath machine<br>h. floral containers/ buckers<br>i. wrapping paper<br>2. Corsage materials<br>a. ribbons<br>b. wristlet bands<br>c. pins<br>d. wire gauges, assorted<br>e. boxes, cellophane tape<br>f. tulle<br>g. water tubes<br>h. spray paints, dip dye, absorption dye<br>i. glue<br>j. glitter<br>k. ornaments<br>3. Arrangement materials<br>a. containers<br>b. floral adhesive tape<br>c. floral foam<br>d. paper mache containers<br>e. hyacinth sticks<br>f. wired picks<br>g. enclosure cards<br>h. cardex<br>i. care tags<br>j. floral preservative<br>k. ornaments<br>l. ribbons<br>m. floral clay<br>n. pin cushion holders<br>o. baskets<br>p. cellophane<br>q. wrapping paper<br>r. budvases<br>s. wide mouth vases | A. Outlining and note taking<br>B. Functional reading skills<br>C. Oral communications<br>D. Following directions<br>E. Inferences<br>F. Vocabulary<br>G. Spelling<br>H. Test taking skills<br>I. Audio visual aids | A. Whole numbers<br>B. Division<br>C. Fractions<br>D. Subtraction<br>E. Multiplication<br>F. Percentages<br>G. Formulas<br>H. Graphs | | A. The student will be able to list all items found in cabinets and drawers and record the quantity found<br>B. The student will be able to compile a list of vendors that supply each item<br>C. The student will be able to be cost effective in determining the supplier that can furnish the item at the cheapest price<br>D. The student will be able to compose a list of items in order to keep up inventories<br>E. The student will be able to complete a work sheet<br>F. The student will be able to complete sample problems<br>G. The student will be able to pass a written test and quiz |

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| | t. wax paper<br>u. staples<br>v. extension tubes<br>w. stephanotis stems<br>x. moss<br>y. floral tape<br>z. chenille stems | | | | |